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Cleanings in Bee Culture

VOL. XXXIX

APRIL 1, 1911

NO. 7

Editorial
Stray Straws

Notes from Canada

Bee-keeping in Southern California

Bee-keeping Among the Rockies

Conversations with Doolittle

Comb-honey Production in the South

Book-keeping and Bee-keeping

No Excuse for Breaking Sections

Co-operation in Selling Honey

Trouble between Breeder and Buyer

Migratory Bee-keeping

Hand's System Possible without Extra Equipment

An Ideal Bee-cellar

Non-swarmer Already a Fact

Keeping Down Increase

Wintering a Surplus of Queens in One Colony

Blueberry Honey

Sweet Clover as a Soil-renovator

Drawbacks to Bee-keeping in New Mexico

Advertising Honey

J. J. WILDER

C. B. SNAVELY

F. GREINER

J. K. HEDSTROM

J. C. M'CUBBIN

G. C. MATTHEWS

J. E. CRANE

S. D. HOUSE

I. F. MUNDAY

W. S. DAVIS

G. W. JOICE

A. E. WILLCUTT

HOMER E. BARTLETT

O. B. METCALFE

W. S. POWDER

Heads of Grain

Our Homes Poultry Department



The Townsend Bee Book

or How to Make

a Start with Bees

By E. D. TOWNSEND, Remus, Mich.

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CHAPTER I—How I Became a Successful Manager of Bees on a Large Scale

CHAPTER II—What Hive to Adopt

CHAPTER III—How to Buy Bees

CHAPTER IV—Folding Sections and Putting in Foundation

CHAPTER V—What to Do just Preceding the Honey-flow

CHAPTER VI—Strong vs. Medium Colonies at the Opening of the Harvest

CHAPTER VII—How to Take Care of Swarms

CHAPTER VIII—Management Previous to the Honey-flow to Prevent Swarms

CHAPTER IX—The Honey-flow

CHAPTER X—Spring Management

CHAPTER XI—Making Up Winter Losses

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Editorial

GENERAL DROUTH IN FLORIDA.

A GENERAL drouth prevails over the State; and what the effect of the honey crop will be remains to be seen. In Ohio, before we came here, every one was complaining of too much wet—rain, rain, snow, and sleet. If nature could equalize things a little we would all be happier.

THE State Entomologist of Ohio, Prof. N. E. Shaw, during the first year of bee-inspection work under the new law, found conditions so bad that it has been deemed advisable to ask the legislature for an appropriation for the year 1911, to the extent of \$2000. Bee-keepers are urged to write a personal letter to their Senators and Representatives, asking for their support. This amount of money wisely expended will be an actual saving to the State in the long run.

QUEEN-BREEDER'S HOME DESTROYED.

WE are sorry to announce that the home of F. M. Morgan, Hamburg, La., was totally destroyed by fire with all its effects, Mr. Morgan being left with nothing except the clothes that he wore. In the house at the time it burned were a number of letters with inquiries in regard to queens, etc., that were unanswered, and Mr. Morgan asks all those who wrote him during the month of March up to March 12 to write him again, as he lost all records by the fire.

The firm of Morgan & Marshall will endeavor to continue filling queen orders just the same.

MUCH RAIN AND BAD WEATHER IN CALIFORNIA.

QUITE a number of reports showed bountiful rains in California, but we just have a card from M. H. Mendleson in which he states that there has been so much rain and bad weather that the bees are a month late in breeding, and there is no chance for them to do much. He says that many have lost from one-half to two-thirds of their bees from starvation, because they did not give them the attention they needed.

Mr. Mendleson stated that he could not reach his home apiary, on account of a bad river crossing, and that it will likely be a month and a half before he can do any hauling to or from the apiary.

SWEET CLOVER AS A PRODUCER OF MILK; TWO CUTTINGS IN ONE SEASON, AND A CROP OF SEED.

WE clip the following from the *Practical Farmer* of March 11:

Last spring we had a small trial patch of sweet clover, about 80 feet square, planted close to the house. In early spring, before any thing else attained any size, it was ready for cutting, and I fed my stripper cow an armful of it every night and morning while milking. This was in addition to her dry feed. I kept cutting sweet clover for her until it went to seed—in all, about 7 weeks. All of our cattle liked it. So did our horses, but not so well. As soon as I stopped feeding the sweet clover the cow dropped back to her former yield of milk, although I gave her other green feed. I found that one could take two cuttings a foot tall or more, either for hay or green feeding, and still give it time to re-seed itself, or even gather seed from it. The last growth of sweet clover could be turned under for green manure with profit.

Yet sweet clover, according to the law in many States, is classed as a noxious weed. Our farm papers are sounding its praise so much now that the day will soon come when our farmers will join hands with the bee keepers in asking to have the ban of disgrace removed. In the mean time bee-keepers would do well to have such items as this copied in their local papers.

SHORT COURSE OF STUDY FOR APIARIAN INSTRUCTORS.

THE programs are out for the apiarian short course of study at Ontario Agricultural College, Guelph, Canada, May 1 to 6, 1911. The course is intended especially for students and ex students who have taken the regular lectures in apiculture, and wish somewhat more advanced work to put them in the way of becoming trained instructors. It is also open to bee-keepers who have gained their elementary knowledge in a more practical way.

The speakers and lecturers, all of whom are practical men, include Dr. E. F. Phillips, of the U. S. Department of Agriculture, and Morley Pettit, provincial apiarist in Ontario (a position similar to that of Dr. Phillips in the United States). Mr. Pettit is also the head of the Apicultural Department of the Ontario Agricultural College. Special attention will be given to the question of diseases of bees—Thursday, May 4, being given up to a foul-brood conference. The full program appears in the last issue on page 34 advertising department.

GLEANINGS wishes that every agricultural college could undertake work of this kind, as it is greatly needed, and the instruction thus gained is of the very best.

HOW BEES ARE WINTERING.

IT is pretty early to state with certainty just yet what the results of the past winter are over the country. The few reports that we have received have indicated that bees are going to come through in good condition. In many parts of the North, an almost unparalleled season of cold weather in December gave no chance at all for a flight; but still it is certain that such a cold spell is not so hard on the bees in December as it would be, say, in February.

In a good many other parts of the country where bees ordinarily have had flights every few weeks, at least, they were hardly able to leave the hives from a time late in the fall until the early part of March. This is a pretty hard strain on bees; but if the stores are what they should be, and the packing adequate, there is no serious loss. Weak colonies in the fall, especially those whose stores are not arranged to the best advantage, will probably succumb; but strong colonies with more than enough sealed stores of sugar syrup seem to be in very fine condition. Most of our colonies at this date (March 16) have considerable brood started, and young bees are in evidence, and this in spite of the very few chances for flight.

On account of the fact that the temperature, as a rule, has not fluctuated a great deal, the bees in the cellar are probably going to come through in pretty good condition, average conditions, etc., being favorable.

Last year in March there was a spell of hot dry weather that started brood-rearing in all colonies at a great rate. This was followed by cold weather later, so that much brood was killed and lost. This year the conditions are quite different. Brood-rearing is progressing normally; but so much cold weather in March will probably not be followed by prolonged cold spells later.

BEWARE OF SUBSCRIBING FOR STOCK IN FAKE CONCERNS.

THANKS to their good judgment, a majority of bee-keepers have escaped entanglement in several so-called opportunities that have been created in the way of "Honey-producing Associations," "Apiary Companies," and the like. While the chances for profit-making in keeping bees in an intelligent way have induced many individuals to enter into this pleasing work, the industry is fortunate in not having displayed great allurements to promotive geniuses. In late years all kinds of coöperative enterprises, from mail-order houses to rubber and pineapple plantations, have been foisted on the too gullible public, and in a very great majority of these organizations the draw-string on the promoter's money-sack has been tightly pulled just before the outstretched hand of the unfortunate investor was permitted to dip in.

Just recently one or two attempts have been made to dispose of stock in "honey" and bee-keepers' associations. Of the men back of these plans we know nothing; but it seems to us that we are taking quite a safe step in cautioning all readers of GLEANINGS at this time to beware. Of course, we may be wrong; but the likelihood that our friends will miss any opportunity to make much money quick by refusing to invest in such schemes is a very doubtful one indeed.

Do not misunderstand us, please, and do not misinterpret what we have said as having reference to any distributing or producing association that has been recognized by this or any other reputable publication or individual. We simply want to remind bee-keepers against temptation which may be presented to them in a most enticing way, but which, if embraced, will very likely bring personal loss, and greatly discredit an industry that has gained a most enviable reputation because of the high character of the men and women who have enjoyed its practice.

PARCELS POST; HOW IT WOULD HELP THE BEE-KEEPER AND THE FARMER.

The following from *The Ohio Farmer* for March covers the ground so well that we are glad to place it before our readers:

I want the parcels post so that I can send things away from the farm to customers in town. I need a parcels post right now, to bring me some eggs for incubation, to my door, instead of having to drive seven miles over the roads that God forgot, to the express office. While we are on the question of eggs, don't you think it possible for the farmer to send eggs by the dozen daily, while they are fresh, to customers in the city, of course by parcels post, and perhaps fresh "garden sass," all by parcels post; or a nicely dressed chicken—by parcels post, or a few pounds of honey, still by parcels post—when we get it?

By soliciting orders by advertising in standard journals, and securing customers who want fresh stuff while it is fresh, it will be possible for us farmers to ship our produce by parcels post, in such quantity as we can produce, in select packages of corrugated paper, or some similar carrier, and cut out the cause of the "high cost of living" at both ends of the line; to the seller, by giving him all the profit; and to the buyer, by making it possible for him to buy for less money.

Aside from the question of the quality of the goods when they reach the table in town—and there is no question but that the quality would be vastly better than now—the question of economy must necessarily be considered first by every one. Who pays the freight now? I pay part of it, and the man who eats the goods pays the rest.

I don't write for the man who has his country place and gets his eggs fresh every day from his own hens; but I do write for the poor man who slaves along with the rent collector as a day dream and the grocery bill for a nightmare. He is the fellow I am trying to aid. The parcels post means that I can deliver him one dozen eggs which I guarantee fresh, on Friday morning, and they will be a whole dozen. His wife won't have to throw out three or five as the case may be, or one where the veins are beginning to develop.

It means I can send him a dressed chicken for 15 to 40 cents less than he pays for it now, and it will be fit to eat, without giving his children ptomaine poisoning. It means that three times a week I can deliver to his door the whole list of his vegetable marketing; and that it will be fresh from the garden; that it will be sealed, and free from dirt, and the possible contamination of no one knows how many dirty hands in sorting and picking over in

the market stalls of his city. Of course I need the parcels post; but I don't need it half as badly as the man in the city.

What is the use for you and me, brother, to pay a man to drive past our doors every day with fifty pounds when he might just as well be hauling a couple of hundred with the same equipment he has now?

ERNEST MERRILL.

If it would be possible to send eggs by parcels post, why would it not be possible to send comb and extracted honey in the same way? A good large sample would stimulate a demand for honey in larger quantity. Bee-keepers should get after their Congressmen. If the farmers and bee-keepers would keep everlastingly after the parcels post they would get it. Thousands of letters pouring in to Congressmen act like hot shot. If you leave the job of writing to the other fellow you will never get it.

FLORIDA NOTES NO. 2; DROUTH AND ITS EFFECT ON THE FLORIDA HONEY CROP;
A WORD TO THOSE WHO EXPECT
TO GO TO FLORIDA.

THE drouth throughout Florida and parts of the South at this writing, March 18, is still on. It is reported that it is the most severe that has occurred for over a dozen years past. While a drouth in Florida does not by any means do the damage that it does in many parts of the North, it may cut down the honey crop very materially. On the west coast, at least, heavy dews many nights (almost equal at times to a light shower) and a natural sub-irrigation do much to modify the severity of drouth; but still vegetation does not take on that beautiful bright green seen at other times, so it is said.

As many bee-keepers are thinking of coming here, a few facts as I have been able to glean them may not be out of place. While A. I. R. has given a truthful picture, the view-point of another is often helpful.

It is a land of sunshine and beautiful climate. In the lake region, where I live, a clear day during winter is the exception. I was struck with the clear sky in Florida at night, and the bright sun during the day. A cloudy day during winter is the exception; but some people would not like the damp atmosphere at night. Perhaps some others wouldn't be favorably impressed with the miles and miles of sand. Indeed, one tourist said it seemed to him that Florida was one "great sand heap," and it isn't much of a "heap" either, for it is all level. A hill in Florida is a joke. The scenery away from the beautiful lakes and bays is monotonous for that reason. Indeed, some parts of Florida, on account of the level country, the sand, the numerous lakes, and the pine-trees, remind one of Northern Michigan.

But there are immense possibilities to the man of brains and energy. One old-timer said to me, "Florida is a right smart place to live in; but," he added, with a twinkle, "no one should come here unless he has money or muscle. Money here will leak like water, unless you look out. Powerful

funny how the suckers give their good money for land that tain't no account, and then when they find how they got bit go up north and give the whole of Florida a black eye." Much if not all that he said is true. On the other hand, many have come here, found health, and made money. If one is going to "invest" he should go into Florida and investigate. To buy "out of sight and unseen" of a real-estate man in some northern city, without seeing the land, how it is located, and whether it is productive, is the height of folly.

Florida has good and bad spots, and the bad spots may be close to a good one. The fact that a piece of land is next to an orange-grove doesn't necessarily signify that it will grow oranges. Don't let any one try to sell you "white muck" land. Where the sand is white it is about as useless as it can well be. When you go into the State, inquire carefully, and don't be in a hurry to invest until you look around. There are plenty of honest real-estate people in the State who will tell the truth.

Again, land may do well one year and fail the next. Said one man who had come here, "I made good money last year off my lettuce, but this year I lost on it. The drouth cut it off. I have made up my mind that one should be prepared to irrigate his land."

Many flowing wells are found in many parts of Florida, and near Bradentown flowing wells and windmills are seen everywhere.

The orange business is being overdone in many parts of the State. Good land will often grow garden truck as well as or better than oranges.

But what are the chances for the bee-keeper? Good, providing too many don't hug together in one locality. The bee business, unlike truck-gardening and orange-growing, should be scattered. The apiaries should not be closer than two miles of each other, and there should not be too many bees in a yard. When a northern bee-man goes to Florida he should learn to look out for robbing and starvation. Bees can fly every month in the year, and during the rainy season they are liable to run short of stores.

What about the people of Florida? I can best answer this by quoting one old fellow who said that "Every one you meet here is from somewhere else." During the winter, at least, almost every one you meet in the State seems to be from the North. Every State in the Union, especially those in the extreme north, is well represented here. Indeed, it looks now as if the most southern State in the country will have a population very largely of northern people. I don't say this because the New Englanders and the people from the region of the Great Lakes are any better than those from the Southland. Far from it! The latter may not have quite so much money; but their kindly cordiality can not be surpassed. The southern people are more open-hearted; and if they have money or property they are far less inclined to be snobbish with it.—E. R. Root.

Stray Straws

By DR. C. C. MILLER, Marengo, Ill.

WHEN THOSE Colorado chaps settle on the right kind of double-tier shipping-case for 24 sections, perhaps we could all adopt it.

A NEW CLOVER is reported in *L'Apiculteur*, 75. M. Martinet, the originator, has named it "apitreffe." It is a vigorous forage-plant, averaging 30 inches in height, and is well patronized by the bees.

G. W. THOMAS, p. 149, if you sow sweet clover on sod when the ground is wet and soft, and have it tramped in by cattle or horses, I think it will grow. I have much trouble to keep it out of the thick sod on my lawn.

A BALLED QUEEN I've often freed by throwing the ball in cold water. Now we are told, *Schweiz. Bztg.*, p. 46, to throw the ball into an empty cold tumbler. [We would be afraid to risk a valuable queen to the cold-empty-tumbler method.—ED.]

GLUCOSE has done a big business in honey, and now it is trying its hand at shoe leather. According to information laid before Congress by Dr. Wiley, leather (especially sole leather) is loaded with glucose to add to its weight. Then when you go out into the wet and snow, the glucose soaks out and the water soaks in.

INDIANA is forging to the front in bee-keeping. Not the least proof of it is the fact that in the beautiful report of the State Entomologist, George S. Demuth, Chief of the Division of Apiary Inspection, occupies 32 pages with "Bee-keeping in Indiana." [Indiana is setting a pace for other States. Other States would do well to follow her example.—ED.]

MARCH 10 there came a warm spell with thermometer above 60, and it seemed too bad to keep the bees in the cellar. But there was nothing for the bees outside, and it might come cold. Inside of a week it came. The mercury went down, down, with a fierce wind, till it was only 6 above zero. Then wasn't I glad the little fellows were snug in the cellar!

"LET A MAN resolve in his own mind that: 'In five years I will own 500 colonies,' let him print it in big letters on a board, and nail it up over his door, and the deed is the same as done," *Review*, page 54. Y-es, "in his own mind;" but better not nail it up where any one else can see it. I've noticed several times that the fellows who *were going* to do such big things were never heard of afterward.

H. C. AHLERS started the season March 1 at Kenner, La., with 179 colonies, 26 of them queenless; took 6000 lbs. honey and made increase. April 22 he shipped the bees to West Bend, Wis. Poor season; took

23,000 lbs. from clover. August, shipped bees to Illinois River bottoms; took 3500 lbs. Spanish needle, and let bees fill up on aster. Oct. 24, shipped bees back to Kenner to winter. Strenuous, but 32,500 pounds.—*Review*, p. 71.

ADRIAN GETAZ refers to a Straw, p. 544, Sept. 1, 1910, where a German writer says late breeding in fall means late breeding next spring, and ye editor says if conditions are favorable in spring bees breed, no matter about previous fall. Mr. Getaz says you are both right, in a way. When bees breed late in fall, conditions are *not* favorable in spring. "We meet that difficulty here in the South frequently, when bees breed late in fall and in open winters, using up their pollen, and brood-rearing in spring is delayed until pollen comes from the field."

"IN AMERICA comb honey is falling in price; extracted, rising. Already 30 cents is paid for extracted, while comb brings 25."

—Dr. Hering, in January *Deutsche Bzucht*. Herr Doktor, while extracted is looking up a bit you are misinformed as to relative prices. Adding up all quotations in the last GLEANINGS, it will be seen that, instead of extracted being 20 per cent higher than comb, comb is 79 per cent higher than extracted. [But extracted is slowly creeping up on comb; while it will never be the same price, there will be less relative difference.—ED.]

EVER STOP to think why bees tear comb when robbing? I *think* it's this way: A single bee, when robbing, never tears a comb. No matter how many robbers, no comb will ever be torn so long as each bee can get at honey. But by and by there is a robber in every cell, and a lot of robbers looking on with no cells they can get into; and then these lookers-on, trying to get into the cells already occupied by their sisters, tear down the cell-walls. If you want honey robbed out without having the combs torn, leave an entrance for only one bee at a time, or else spread out enough honey for all. In either case there will be no lookers-on, hence no comb torn. [Your experience is the same as ours. Your theory and practice are sound.—ED.]

EDITOR HUTCHINSON, *Review*, p. 59, has "dreams of some one, some day, building up an *immense* business in selling honey in small quantities all over the country, sending it by express. Of course, the quantity can't be too *small*, as the transportation charges would be too great in proportion to the cost." That dream will never come true in that exact form. But it may come true when parcels post is here, and that's in hailing distance now. The demand of the people is becoming so insistent that it can not be ignored much longer. With parcels post the *small* quantity will be sent at just as low rate as the large. Speed the day! [Some of the stand-patters in the Senate and House are going home to stay. With these obstructionists out of the way, parcels post will have a better chance.—ED.]

Notes from Canada

By J. L. BYER, Mt. Joy, Ont.

According to Wesley Foster, four pounds of comb honey are used to one of extracted in Colorado. Here in Ontario I would put the proportion at about ten of extracted to one of comb, and we produce some good comb honey too.



That comb illustrated on p. 19, Jan. 1, is hardly a normal one. In other words, it is rare to find a comb with so little honey in the center under the top-bar that has so much honey along the end-bars. Even with feeding I rarely find a colony that would so arrange the stores, as they always store a greater amount under the top-bars.



During the past season the demand has been extra good for honey here in Ontario, at good prices; and while some writers over the line have been writing that honey at better prices would retail slowly, we have been realizing here right along that there is nothing in the contention when the honey is of good quality, and the public have gotten over all suspicions of adulteration.



Last summer a firm in Austria sent me two Carniolan queens. On their arrival the queens and all the bees were dead—in fact, were all dried up, showing that they had been starved for some time, all the candy being consumed. By the invoice which came by the same mail I found that they had been on the road for 19 days. The firm was notified, and they sent me one more queen. When the cage arrived, all the bees but one were dead, and the queen was in the last stages of starvation. I tried hard to save the queen, but she died the next day. Is this a common experience? Was not 19 days an unusually long time for the bees to be in transit?



Bees wintering on the summer stands here in Ontario this season are being put to a severe test. They had no flight after the last week in October, and are not likely to get one before the middle or latter part of March. December was cold; but since then the weather has not been out of the ordinary up to date, Feb. 11. With us the clover has been covered with snow ever since last of November; but at no time have we had more than six inches on the level. This has been against the bees, as the hives have been exposed all winter instead of being covered with snow, as is generally the case. I understand that, in other parts of the Province, the fall of snow has been heavy. As a rule we have less snow in our locality than in most of the sections around us.



F. L. Pollock, who writes delightful stories for the *Youth's Companion* and other mag-

azines, lives near my home in the summer time, and has a nice little apiary where he spends many happy hours. With his wife he is spending the winter in Tennessee; and under date of Feb. 9 he writes me, asking how the bees are wintering up here. Among other things he says that in Tennessee the thermometer dropped to zero in December, and that at date of writing the bees were working on the soft maples. It was news to me to learn that it gets so cold down there, and also to know that the maples bloom so early. I wonder if they are apt to get a hard "freeze" before settled warm weather comes around again. It looks as though they have as sudden changes in the South as we do here in the North, to read of zero weather in December and bees gathering honey early in February.



Last fall I called on a wholesale dealer in honey and other farm produce, in Toronto; and while in conversation with him he pointed to a large pile of corrugated-paper shipping-cases, and said, most emphatically, "That is the way to ship comb honey." On examination I found that they were the same as those used by Mr. Crane. I must say that I was surprised, as I did not know they had been introduced into Canada. This dealer said he had tested them thoroughly, and that at different times he had sent a few cases to the western Provinces of Manitoba, Saskatchewan, and Alberta, and had yet to year the first complaint of breakage. While I have had little experience in shipping comb honey, I have concluded that this dealer had reason to say that they are the shipping-case *par excellence*, so far as the transportation of comb honey is concerned.



Regarding that note of mine on the tariff changes on honey, page 125, March 15, I might say that I have given a wrong impression altogether in that sentence beginning with "Many Ontario producers feel that the markets they have been building up for years will now by reason of geographical conditions be snatched away from them." The inference is that I have reference to the West India honey, whereas I had the western market in view. I might say that the note in question was written at a time when I was, by the doctor's order, forbidden to do any writing, nor even to dictate any thing. That will explain the mix-up. Yes, Dr. Miller, it is all right to be neighborly (page 124); but with honey selling in a wholesale way at about two cents a pound less on the United States side than in Ontario, it is not to be wondered at that many bee keepers here are objecting to the proposed changes. With honey selling at the same price in both countries, free trade in the article would be a blessing; but with the difference that I have pointed out, it certainly does not appeal to the Canadian producer as an attractive arrangement.

Bee-keeping in Southern California

BY MRS. H. G. ACKLIN, GLENDORA, CAL.

Let us beware when we commence extracting orange honey. If you were not present when G. J. Lynn read his paper, "Unripe Honey," watch for it in the *Cultivator*.

If we have a crop this year (which can never be fully determined until the flow is over) all of the big producers in this section have decided to hold their white extracted honey at 7 cts. per pound.

Indications are for a late season. Much of the time during January and February, and at this writing, March 8, the weather has been cool and cloudy, consequently brood-rearing has been delayed.

"Californians for California, and California for Californians!" This is the slogan I heard a bee-keeper use the other day. Honey-buyers had better look out. We may get so self-centered that Eastern money will not be accepted for our product.

The Van Thomas Co., Los Angeles, is making plans for a book of recipes in which honey is used exclusively for sweetening. This is a move in the right direction. If the mothers of our land could be brought to understand the truth in regard to using honey in place of sugar, its consumption would be doubled in a very short time.

Last fall there was a farmers' institute held at Colton, in the interests of bee-keeping. The people from Berkeley, who have charge of the farmers' institutes, conducted it, and local bee-keepers furnished papers and took part the same as at a regular bee-keepers' convention. This is as it should be; and if things keep coming our way, bee-keepers will come into their own in a few years.

ANNUAL MEETING OF THE LOS ANGELES CO. BEE-KEEPERS' CLUB.

Our county club met in the Chamber of Commerce, March 2, at 10:30 A.M., with the president, W. R. Wiggins, as chairman.

E. B. Shaffner was appointed secretary *pro tem.* in the absence of the regular secretary, D. J. Shultis. W. H. Allen, apiary inspector of Ventura Co., sounded a note of warning in regard to parties who contemplate shipping in bees which are near infected districts. A committee of five, most of its members having ranges in the northern part of the county, where the danger is greatest, was appointed. This committee is expected to assist our inspector, Mr. De Sellem, in keeping those bees out of our county.

We have an excellent county ordinance covering this whole matter, and the railroad officials are ready and willing to conform to the obligations laid on them. With so many people on the alert, it would seem impossible for suspected bees to get in, even by team.

Our time was limited, so no papers were read. E. B. Shaffner was elected president, and D. J. Shultis secretary and treasurer.

A bee-keeper said to me not long ago, "I read your writings, but do not agree with you in every thing." I replied that I was glad he considered my department worth reading, and did not expect everybody to agree with me in every thing. How much better is a frank statement like this than secret opposition, with nothing tangible enough about it to run down, but "alle samee" is in evidence in a sly way! Probably, if time had permitted, this same gentleman could have given me some pointers that would have been useful to me in future. There are as many methods of bee-keeping as there are bee-keepers; and the only way we can keep ourselves from getting into the most selfish kinds of ruts is to talk to and listen to the "other fellow," both through the bee papers and in conventions. My heart was made glad many times during the recent State convention when some one would shake my hand and say how much he enjoyed my department, and speak about the good he considered I was doing. My great desire is to help bee-keepers everywhere, and especially those in my own State.

In looking at that picture on page 628 of the Oct. 1st, 1910, issue, I am reminded very forcibly that the Wright Bros. ought to perfect their flying machines so that moving bees, supplies, and honey, to and from our mountain canyons, in that way, will be feasible. Just think what a boon a safe flying-machine would be to California bee-keepers! Last winter nearly 200 colonies of bees, including many fixtures, were moved from Corona to Glendora; and the trials and tribulations of that moving expedition were something awful. Part of the bees had to be unloaded before the last stiff grade into the canyon could be made, although there were four horses to each load. Just imagine, if you can, the vast difference there would have been in moving by aeroplane—no roundabout roads to follow, no grades to overcome, only straight sailing and landing at the right spot while it was still daylight. No danger of the airship getting stung, so plenty of time could have been taken to have unloaded the bees on their proper stands, instead of setting them down anywhere to be shifted later. But this is only one of the many instances in which a reliable flying-machine would come handy for California bee-keepers; so, won't you please, Mr. Editor, write the Wright Bros. a letter requesting them to "hurry up"?

Bee-keeping Among The Rockies

By WESLEY FOSTER, Boulder, Colo.

More snow has fallen on the mountain ranges of Colorado than for ten years past—over fifty inches since the last of February, and in the valleys about half as much. As there is time yet for considerably more, a good supply of water for irrigation is already assured.

Our colonies that gathered rosin-weed and other fall honey of poor quality are showing the results now by dying off (and mainly from dysentery). A few of the hives that were fed sugar syrup too late for the bees to reduce it have suffered wherever this syrup has soured.

HEAVY LOSS IN SOME PLACES.

Where there was a fall flow, or where feeding was done early enough, the bees have wintered in fair shape. Northern Colorado had only a slight fall flow, and very little breeding was done to furnish the hives with young bees. Where this was true the loss has been very heavy—in some cases from one-third to two-thirds of the colonies.

CORRUGATED PAPER IN SHIPPING-CASES.

There is one serious objection to corrugated paper. That is, that if thick alfalfa honey gets between the sections and the corrugated paper it sticks tighter than glue, and the paper is badly torn in getting the sections out. Thin honey will be absorbed; but thick alfalfa honey will work under the sections and stick to the paper so tightly that it is hard to scrape it off. This, however, would not persuade me to go back to the drip-sticks.

ADVERTISING HONEY.

Advertising honey through the popular magazines will accomplish something, but there is a kind of work some are doing now—that is, preparing short articles on bees and honey, and furnishing these occasionally to local papers—which is read more closely than any other kind. Any little "write up" of a home or local industry is read with interest. Let us cultivate the acquaintance of our local editors in this way. It might be a good idea to have some of our most entertaining writers prepare paragraphs along this line to be adapted to local conditions. Little items which were put in without the bee-keepers' solicitation have brought orders to them immediately. The following serves as a suggestion:

"Several of our local honey-growers, Mr. Collins, Foster, and Buhl, are shipping a car of fine white comb honey to the East. The crop this year was above the average in quality and quantity. Finer, more delicate

combs of the delicious sweet have never been raised anywhere."

Why not give the news of the bees and honey season to the papers? A suggestion of this kind will at once create new demands for honey.

BEE INSPECTION IN WINTER.

The question of inspection for foul brood in winter has been brought up in Colorado. One man's bees were inspected while he was absent; and several hives being declared foul were ordered by the inspector to be taken up. The owner resented the winter inspection, which had been made without his knowledge; but the work did not disturb the clusters, as it was carried on primarily to find any colonies that would be a menace in the spring. This inspection to find colonies that are dead from foul brood or infected will lessen the work in May, June, and July. No intelligent inspector will go into an apiary and open the brood-nests on cold winter days; but finding dead and badly affected colonies before there is any chance for robbing in the spring is a feature that will go a long way toward preventing the ravages of the disease later.

TIME IN THE INSECT WORLD.

A short paragraph in *Our Dumb Animals* speaks of the short life of most insects, and suggests that for such the element of time is very different from our standard. Some insects live but a few days: do they suffer as much in a minute, when tortured, as we do in a week? The author mentioned above assumes that they probably live the moments more slowly than we. If this is so, a bee maimed during hive manipulations, and struggling for an hour, would be undergoing torture as severe as if a human being were suffering for weeks and months. A day with a bee is as full of import as a year with us. This brings up the question of feeling among insects and other lower organisms. We probably shall never be able to measure this adequately in comparison with ourselves; but we can easily see that all animate life has a conception of ease and comfort somewhat similar to our own.

More Honey Recipes.

We noted some time ago in GLEANINGS that you ask for honey recipes. Here is one we are using right along; and while it is nothing elaborate it is certainly wholesome for making oatmeal cookies:

Granulated sugar, 1½ cups; honey, ½ cup; 2 eggs and a cup of melted butter. You can put some lard with it if you wish. Mix the sugar, honey, and butter; then add eggs, and beat lightly. Dissolve ½ teaspoonful of baking-soda in 4 tablespoonfuls of hot water; one teaspoonful of cinnamon and ½ teaspoonful of cloves; one cup of finely cut raisins; roll in a little flour; add three cups of flour; 3 cups of rolled oats; mix all together and roll out on a board to medium thickness; cut in small cakes, and bake in a moderate oven. Keep in an airtight box. We never need the box, as they don't last long around here.

Parma, Idaho.

WENDTE BROTHERS.

Conversations with Doolittle

At Borodino

USING OLD COMB FOUNDATION.

"I am planning to get my sections ready for the coming season, as my time is fully occupied during the summer months. I had intended to put the foundation in the sections as folded and put in the supers, ready to go on the hives when the honey season opens, for when the busy season comes I can not attend to every thing without slighting something. Some think that the bees, to do the best work, must have the foundation almost new from the machine. But I have several hundred sections filled with foundation left from last year. Do you think it would be necessary to cut out this foundation and replace it with new?"

"If it were more convenient I would put foundation in sections and have it on the hives in 24 hours after it left the mill. But each apiarist would then be obliged to have a mill, which is something many do not care for. Not having a mill compels most of us to order of a supply house or of some one having a mill. Now, even if the one we order of has the foundation on hand, and sends it promptly, it is some time before we can have it to put in the sections, especially if we ordered in quantity and had it shipped by freight. In any event, foundation from the mill to the hive in 24 hours is practically out of the question. Some, though they realize the difficulty connected with this theory of using only fresh-from-the-mill foundation, maintain that the fresher it is the better. An old bee-keeper who has used hundreds of pounds of section foundation admits that, although he believes it makes a slight difference to have it fresh from the mill, he himself, as a matter of convenience, puts it in at any time during the winter and spring. The experiments I have made during the years which have passed since I began to use thin foundation in the sections have convinced me that foundation five or even ten years old is just as good as when it first came from the mill, if it has not been on the hives during the latter part of the season through a period of scarcity. If sections are left on the hives after the harvest, and propolis enough is gathered so that the unused foundation is varnished over, this propolis-painted foundation should be cut out of the sections, melted, and replaced by fresh."

"But the claim is made that foundation gets old and hard so the bees can not work it to good advantage."

"Foundation on cold wintry days does seem that way; but on a hot summer day in the upper room of the building where your furnished supers are stored away (some of which may have been there as long as five years) the foundation in the sections is soft

and pliable, and handles as easily as if fresh from the mill. An attic on a warm day will be at about the same temperature as the inside of a cluster of bees during the working season, and the foundation will not appear at all as it does in winter. Any foundation, in a heat of from 95 to 100 degrees Fahr. has a yellow, oily appearance. You will not be able to detect any difference between the old and new under such a temperature. Fresh from the mill, foundation, if taken into a cold room, will assume a whitish, hard appearance. If on some very cool day in June a frame of old foundation is lowered into the center of the brood-nest, left for five minutes, then compared with that fresh from the mill, it will be seen that the old and new have become alike. Leave the old for two hours, and if it is at a time the bees will work any foundation they will begin as quickly as if it had been fresh from the mill. When bees cluster on foundation during a honey-flow, the temperature within that cluster is brought up to from 92 to 98 degrees, rendering both old and new foundation alike, soft and pliable. Under these conditions no one can tell the new from the old, unless marked in some way.

"All the foundation used in both sections and brood-frames in my apiaries during the past twenty years has been placed in those sections and frames during December, January, February, and March, and both the supers of sections and hives of frames so filled are stored away ready for use when needed. This matter of old foundation not being as good as new is like many another theory advanced without due consideration. Once started, it keeps on its rounds, until multitudes think it must be a fact."

The Bee-veil.

BY KATE LOWE GRAHAM.

O bee! I can hear your loud humming;
I want to get close to you, dear;
But the sting in your tail keeps me fussing—
The tale of a sting is what I much fear.

The little gold bands on your back, dear,
Your eyes in such crowds on your head,
And those lively antennæ so black, dear,
Are so nice—but the sting's what I dread.

The baskets you wear on your thighs, dear,
Are big, and so goldenly packed;
And your wings are as fine as your eyes, dear,
And the honey's so perfectly sacked.

When you're sailing up close to the hive, dear,
And the landing's not easy to make,
It's fun to see just how you dive, dear—
Like an air-ship not sure of its brake.

Now the cactus and greasewood are blooming,
And the sun's steering northward again;
You are working all day till the gloaming—
Each one of you working like ten.

I've seen you dive down in the lilies;
I've seen you sail off on the wing;
But I am not going to be one of the sillies,
Walking around with a terrible sting.

That's why I sit on the fence, dear,
And watch you flock up from the place
Where pricklies and gold-balls are dense, dear,
With this funny bee-veil on my face.

Socorro, Mexico.

General Correspondence

THE PRODUCTION OF COMB HONEY IN THE SOUTH.

Putting it on a Solid Foundation; How to Keep up the Strength of Colonies in Localities Having Intermittent Honey-flows, and, at the Same Time, Eliminate all Unprofitable Queens; a Valuable Article.

BY J. J. WILDER.

In the South we have a nearly continuous honey-flow in early spring, and in most sections we have other honey-flows coming on afterward with perhaps a few days or weeks intervening; but in some sections the main honey-harvest comes on after the spring flow, during which the bees may store only a small amount of surplus. Now, to prepare the bees for the first honey flow is not an easy thing, especially in the production of *comb* honey. In the production of *extracted* honey the bees usually have plenty of empty combs to occupy in brood-rearing, and to store honey in during the early honey-flows, but not so in the production of *comb* honey, for usually we have a smaller amount of comb. This necessitates more manipulation in order to have the bees in the best possible condition for each approaching honey-flow. During winter and very early spring the bees eat away their stores from the center of their brood-nest, leaving conditions ideal for the spreading of brood as soon as the supply of pollen is ready, and, later, a little nectar. In a way, the bees prepare themselves for the first honey-flow; but what about the flows that are to come *later*? In the production of comb honey, a queen usually slows up on egg-laying, and the bees, following close in behind her, fill the comb with honey, and seal it. By the time the flow is well off, there may be only a small amount of brood in the central combs, and the honey sealed right up to the brood. There may be just enough nectar coming in to keep the bees living in a "hand-to-mouth" manner, leaving a condition any thing but ideal for the next approaching honey-flow. If such is the case they will not have enough bees to harvest it, for the vitality of the field force is at a low ebb at this time, and no young blood is coming on to take their place.

What are we to do to relieve such condition, and harvest crops of honey along through the season? Right here is where the honey-extractor comes in play in the production of comb honey. Indeed, it is indispensable. As soon as the first or spring honey-flow is over, the surplus comb honey should be removed and cased, and the bees prepared for the next approaching honey-flow by extracting the honey from the two outside combs, and spreading the others.

The two outside combs that were extracted should be inserted in the middle of the brood-nest. This will lead the queen out and start brood-rearing.

If the time for the next honey-flow is drawing near, close watch should be kept on those combs inserted; and as soon as the queens occupy them well, extract the honey from two more combs, and again spread the brood-nest and insert the extracted combs in the center of the brood-nest as before. All colonies should be treated in this way.

Within a very few days of the expected honey-flow, all colonies that need it should be thus treated once more; and if there is considerable time intervening between the first and second honey-flows, the time between the second and third extracting should be lengthened out according to the length of time. Of course, the longer the time, the less extracting will be necessary, as the bees will consume the honey, and thus give the queens room, unless there is some nectar coming in.

This method of extracting and spreading the brood should be followed before each honey-flow until the last one, and then let the bees fill up for winter.

Now, this plan of extracting from the brood-chamber is not advisable where there is only one honey-flow coming in early spring; but this is not often the case in the South.

It might be said there would be danger of extracting too heavily, and a lot of bees be lost by starvation if such a method were adopted. Far from it. I have adopted this method, and have never had a failure nor had to feed my bees to prevent starvation.

When it comes to the question of wintering bees I had rather risk my chances on a colony that has been kept full of young bees the entire season than one that made a good start in the spring and lagged the rest of the season.

Now, of course a few colonies may fail under such severe treatment—colonies that have old and failing queens which can not again properly supply their hives with eggs. Right here is another very good feature of this plan. It gives the apiarist chance to test his queens at a time when it is most convenient for him to requeen, and to raise the best queens for this purpose. An old failing queen may spur up after a long winter's rest and populate her colony very well during early spring, yet lag the remainder of the season. The colony having such a queen would bring no return and might be a loss to the bee-keeper before another season. These failing queens can be detected as soon as empty combs are given them after their first storing in early spring. They will lag or will not lead out in egg-laying as will the young and prolific ones, and the apiarist can then replace them; and, my! how it does add life to that colony the remainder of the season!

This scheme of extracting and spreading brood between flows is the only one that will put the apiarist right down on a solid

foundation (if bee-keeping has one, and it surely has), where the locality favors it.
Cordele, Ga.

BOOK-KEEPING AND BEE-KEEPING.

How the Former May be the Means of Making the Latter a Success.

BY C. B. SNAVELY.

Book-keeping and bee-keeping may seem to be incongruous; still, it plays an important part in the well-regulated apiary. It is as essential as smokers and veils. You might possibly get along without them, but how handicapped you would be! So with book-keeping; you could possibly manage to get along without it; but how tangled up you would be with every thing! You would not know how much it was costing you to run your apiary, nor how many pounds of honey you were getting. You would know but very little of the actual inside workings of your own plant. If it is necessary, then, to keep account of some things in order to know about honey production and profit and loss, is it not also essential to keep an accurate record of every thing pertaining to the plant? The records of some things may be more necessary than others; but the record of every thing becomes very valuable to the careful bee-keeper. Book-keeping goes hand in hand with successful bee-keeping. In order to be successful you must know about things; and to do this you must keep account of every thing in a way that will give you the information you need.

If you are ultra careful you want to know how many pounds of honey you get per colony per year. This means some work, to be sure; but how satisfactory at a time when you want to select your breeding queens for the spring? All that you have to do is to look up the records, and that will tell the story. Will not all this be worth the trouble?

As to the financial part of the business, I presume that almost every one keeps some sort of account of the cost of feed and the amount received for honey; but would it not be better to keep an accurate record of every thing that costs money, and every thing that produces the same? In order to do this you must have a place to keep such an account, and then be sure that every thing is put down. Where there is no particular system for doing this, many things escape notice that may sometimes put the balance on the right side of the ledger. Keep a record of every thing sold, whether it be a pound of honey to a neighbor or a consignment sold to the store. Likewise, if you make purchases, large or small, see that it is placed on the account. Then some day when you want to know how things are running, all you have to do is to get out the book and figure a little, and then you will know. You will really *know*, not merely guess at it; for the figures will tell you ac-

curately how the thing stands. If there is a loss you will be able to investigate and discover where the leak is, and then remedy it. In this way you will be able to overcome any poorly conducted part of your work and put it on a paying basis.

There are many more minor things of which a careful record should be kept, such as when the colony became queenless; when a queen was introduced or cells given; when it had brood; when it swarmed; and in the fall the quantity of stores it had when last examined. You will also find it very valuable at another season to know the age of the queens in their respective hives. It pays to keep a record of every thing, and thus counteract the errors of previous years.

Not alone is it businesslike thus to do a little book-keeping along with your bee-work, but it is a pleasure to look over the accounts from time to time. You can do this and take comfort in it if, every day, you will do a little book-keeping and have a stated time and place for doing it. Remember, a lazy man in the bee business is no worse than a dead one, only he takes up more room.

Lititz, Pa.

[Failures in business of any kind are often due to a lack of system and book-keeping. Most large business concerns, especially those engaged in manufacturing, have installed what is called a "cost system," whereby not only the exact cost of each article manufactured is known, but the profit or loss for each month of operation. Many people fail because they don't *know* whether they are making or losing money. They go ahead *blindly*, and then talk about "hard luck" when they get into financial difficulties. The bee-keeper needs to *know* where he stands, as much as any one else; and his business operations are not so complicated but that he *can* know.]

Sometimes a farmer will be making money right along on his farm, but losing considerable in the dairy business without knowing it. In the same way a bee-keeper may be doing well selling honey, but losing when he sells bees. Only a good system of book-keeping will correct troubles of this kind.—Ed.]

HOW TO PROVIDE AGAINST THE BREAK-AGE OF SECTIONS IN FOLDING.

Is there Any Need or Excuse for Breaking 10 per cent of the Sections in Removing from the Super?

BY F. GREINER.

On p. 534, Aug 15, 1910, is described an unusual experience with one-piece sections, and their breaking in folding them. The writer, Mr. Maxwell, says: "Large quantities of sections never see service, because they are broken in folding." If this is true with him, then there is something wrong with the man who does the folding. He ought to fold a thousand without breaking

even *one* good one. I have folded 1000 in one hour many a time, without any machinery, and did not break one.

Sections fresh from the manufacturer fold without breakage. Old sections, when perfectly dry, give trouble. If placed in a cellar for one or two weeks previous to being folded, there is no trouble. A crate of dry sections may be wrapped up in a blanket wrung out of hot water, and all covered up with an oilcloth. Thus leaving for a day or two will prepare sections for the folding.

Further, Mr. M. says: "When the heat of the hive dries the wood, the corner shrinks and pops apart, making the section unsalable." Such a case, I venture to say, does not happen, at least it never has with me, in 35 years. The fact is, I have occasionally slipped a broken-out side of a faulty cross-grained section in its place after the section had been put into the wide frame, which I use in my comb-honey supers. The honey itself has always held such a section in shape perfectly, and even in such a case I would not want to resort to a metal corner. It would not be needed; besides, a metal corner would be very objectionable in a section for various reasons.

Again, Mr. M. says that a comb-honey super can not be unloaded without 10 per cent breakage. I do not know what kind of contrivance the super is. Mr. M. refers to or uses, but with almost any super sent out by manufacturers, with the possible exception of the T super, there is no need of any breakage at all, and yet one may handle the filled sections rapidly.

Mr. M. continues: "After the cleaning of propolis, hundreds more are broken." I am at a loss to understand what Mr. M. means. I never had such an experience.

The following is equally dark: "Then when placing the sections in shipping-cases, some of them are not square, and in pressing them in they are squared up. If the corner holds, the honey is cracked; hence the necessity of no-drip crates, etc."

Now, all of this is wrong—altogether wrong. A section which is not square would not have been square if it had been fixed up with metal corners. If not square after being filled with honey by the bees, it would be foolhardiness to try to square it. Any such section must be put into the shipping-case as they are. They do not leak any more than perfectly square ones. There is usually a little play in the shipping-cases to allow for some inaccuracy or variability, and there should be. The no-drip sticks and the corrugated paper are used to provide for incidental minor leaks only, and safer carriage. No comb should crack. A cracked comb will make muss enough to soil some of the sections, even with drip-sticks under them.

I have raised comb honey for 35 years. I have made up a great many thousand sections with my own hands; but all the broken sections which I ever had in these years would not fill even one bushel basket, and Mr. M. has several in one season. We

use pine stumps for kindling; basswood sections are not nearly as good, and cost a great deal more. It will pay to use more care to prevent breakage. The only time we break sections is when we try to make them up when too dry or when the timber is at fault, either brashy or cross-grained.

I imagine that kiln-dried timber is not so well suited for sections or hives either. I saw an otherwise fine lot of newly made-up hives a short time ago made of timber almost ruined by thus being seasoned artificially. Possibly Mr. M. has had sections to deal with made from such timber.

Naples, N. Y.

[The article by Mr. Maxwell, in our Aug. 15th issue, p. 534, should have had a footnote correcting some of the mistatements; for the breakages in sections can not be any thing like that stated unless the sections are very poorly made, or gross carelessness is used in handling them. Your reply, however, covers the matter much better than any thing we could have said; and, besides, you have given a valuable suggestion about putting sections in a cellar before folding.]

We do not think any manufacturer of bee-supplies is now using kiln-dried lumber. It was found years ago to be unsuitable.

The metal-corner scheme of holding sections is old. If we are correct it was made the subject of a patent some years ago; but the idea never was and never will be practicable. While the corners could be stamped out cheap enough, it would cost altogether too much to attach them to the corners of the sections. If one-piece sections would not hold together it would be cheaper to use nailed or dovetailed sections.—ED.]

ITALIANS VS. CARNIOLANS.

Conditions in which Carniolans are Superior;
Better for Resisting Disease also.

BY J. T. DUNN.

In some parts of California, especially in the orange and sage belts, where the main flow comes during the swarming season, I have seen Italian colonies swarm three times, and the first swarm would swarm once. I have also seen them swarm with young queens, and with only four or five frames of brood. I never had a colony of Carniolans in the orange or sage belt, and can not say whether they would swarm any more than Italians; but after two seasons of experience with the Carniolans on the San Joaquin plains in the alfalfa and clover districts, where the flow begins about June 1, and lasts until Nov. 1, I would not want to try them. In a location where the main flow comes during the swarming season they would breed heavily, and for that reason I think excessive swarming would be the result. But in the alfalfa and clover districts, where we have very little swarming, we are compelled to make up our winter loss by dividing our strongest colonies in the spring,

which are always Carniolans. During our honey-flow the Italians are always crowding the brood-nest with honey, and we are compelled to extract them many times during our honey-flow to give the queens empty combs to breed in. This is not the case with the Carniolans, as many of the queens will lay in every comb in a ten-frame brood-nest, and many of the combs in the first super will be filled with brood until the flow becomes heavy. We then space all combs to eight in the supers, and use two supers on each hive, as it would be impossible to crowd all bees into a two-story ten-frame hive. With these mammoth colonies one should be surprised at the amount of honey colonies of medium strength will gather in what would be called a poor season. If we expect to clean up European foul brood we must first have colonies strong with bees; and to get strong colonies I know of no way but to use Carniolans. The last season proved to many of our valley bee-keepers that the Carniolans would withstand this disease when the Italians in the same apiary were infected and reinfected. The Carniolans have proven themselves superior to Italians in this section of California.

Fresno, Cal.

CO-OPERATION IN SELLING HONEY.

An Association of Bee-keepers Suggested for the Purpose of Disposing of Honey; How to Take Care of the Small Producer.

BY J. K. HEDSTROM.

The object that we as honey-producers wish to attain is a reasonable price for our honey—sufficient to give us a liberal return on the capital and labor invested. A normal price is more to be desired than a high price. We may as well face the situation squarely and not deceive ourselves.

Mrs. Consumer calls up the grocer, asks the price of honey, and finds that she can get nine pounds of extracted honey put up in cans for ninety cents (a far too reasonable price). She knows that her husband's wages have advanced very little, although every thing is so high; and as she wishes to live within her means she inquires in regard to the price of the syrups, and finds that they are one-fourth or one-third cheaper than honey. This causes her to reason something like this: "I know honey is the better, and we all like it; but it seems so dear I do not think we can afford it. I know, too, the cheaper syrups are made of glucose, and flavored; but they are so much cheaper, and, after all, they taste sweet, and that is what we want. I think I had better get the syrup."

Now, a few of the larger bee-keepers get together to sell honey on a coöperative plan, but somehow they do not seem to get the reasonable price that they expected. They talk the matter over, and find that there is honey on the shelf beside theirs at a lower price. A small bee-keeper had to sell his

crop, as he needed the money; and as the commission man wanted to make a little something for his trouble, this small producer was forced to take less for his honey.

In selling honey, therefore, it seems that we have to deal fairly with Mrs. Consumer by asking a reasonable price. This could be accomplished by coöperation if the small producer could only be managed. Nothing could be better in theory, but every small producer can testify to the contrary from experience. If we place every bee-keeper of less than 200 colonies in the class of small producers, on the assumption that any one with 200 colonies or over has enough invested, both in capital and labor, to take a vital interest in the welfare of bee-keeping as a business, we may begin to draw conclusions. The small producer (and he is legion) has one bad failing—he does not depend entirely on bees for a living, consequently his only interest is to sell his honey quickly and get back to whatever occupation he left. It is impossible to organize this class, although it is entirely feasible to organize the larger producers, and this should be done on lines similar to those carried out in the fruit-growers' and dairymen's associations; that is, the organization should be conducted under the laws of that State by most of the larger producers, within a reasonable radius of some large shipping-point, such producers to hold a controlling interest of stock, always. The plan of the association would be to issue a certificate to the small producer for his honey, a previous arrangement having been made with some bank to cash these certificates at, say, two-thirds their value. For instance, some kind of chattel-mortgage arrangement could be made between the association and the bank as security. The certificate should state that the association had received a certain number of pounds of honey (kind and grade mentioned) of the small producer, and it should direct the bank to pay this producer on whatever basis the chattel-mortgage arrangement reads between the association and the bank. Then a separate agreement should be given the small producer by the association, to the effect that he is to receive the rest of his money plus or minus the advance or loss the association has made at the end of the year after all expenses of marketing have been deducted, it being understood that these expenses are to be computed collectively on the number of pounds marked by the association.

It should be understood that whoever subscribes for stock of the association is to receive, say, eight or ten per cent fixed dividend. Any bee-keepers desiring stock might give their honey (two-thirds value of, or whatever assessment the bank puts on it), in place of cash to pay for stock. With an alert, honest business man to manage, the association would very quickly set the price for honey, and would get all the market will stand. If the plan proved a success it would be copied all over the country, and gradually bring about a higher price for

honey; but a venture of this kind must be run on sound business principles.

Calabasas, Cal.

TROUBLE BETWEEN A BREEDER AND A BUYER OF BEES.

What Should Be Expected of Each?

BY J. C. M'CUBBIN.

Mr. Root.—The European foul brood (or black brood) had a hold on the bees in some parts of California last year, and I was among the unfortunate. Being anxious to secure two full colonies of good healthy stock for breeding purposes, and from circulars sent me by Mr. T. L. McMurray, of Ravenswood, W. Va., I believed that his "Superior All-over-yellow Italian Bees" were just what I needed, as he claimed his stock of bees consisted of only one strain—the "Golden All-over," and all bees were sent out with a positive guarantee to please.

On May 7th last I mailed him an order for two full colonies of bees with tested queens, enclosing \$10.00, his price for the same. After waiting till June 5, and not hearing a word from Mr. McMurray, I wrote him, stating that an explanation of the prolonged silence was anxiously desired. Shortly afterward I received the following brief note:

Mr. J. C. McCubbin.—Your bees have been shipped.
Ravenswood, W. Va., June 7. T. L. McMURRAY.

Just at dark, on June 14, 38 days after mailing my order, two hives arrived. The bees in one had been dead several days, judging from the odor it emitted, and the outward appearance of both hives showed that Mr. McMurray had not exercised the usual care of queen-breeders in preparing this shipment.

Prof. Ralph Benton, of the University of California, being about two miles from my place at the time, I called upon him, and he went with me to my out-apiary, where he and Mr. L. Sinn, deputy foul-brood inspector, opened the hives and inspected the two colonies. In the hive which contained the live bees, instead of a "full colony" we found a very weak nucleus. This hive contained eight frames without a wire. The combs had been drawn out only $\frac{1}{2}$ to $\frac{3}{4}$ size from very narrow starters. Four of these half-combs had been broken down; but as there was not more than a cubic inch of honey in the whole hive, there was no particular damage from broken combs.

On opening the other hive we were met with a surprise, for none of us had ever seen such a mess. The ridiculous part of it was, it came from a queen-breeder sending out glowing advertisements.

From the offensive odor and the entire absence of honey we were unanimous in the opinion that this colony had been shipped out on the 3000-mile journey without stores, and had died shortly afterward. Frames and combs, same as the first hive. There

was no doubt in the mind of either of us that this had been an old weak queen with a very few bees, and two frames of brood had been added on being shipped. The death of the brood in these two combs was what caused the offensive odor.

A number of moth cocoons and patches of web four inches across extended through the midrib, indicating that this hive contained plenty of moth when shipped.

Instead of being "Superior All-over-yellow Italian Bees," as advertised, not a bee showed over one-half yellow.

As satisfaction had been guaranteed, I wrote Mr. McMurray a full account of the matter, and in closing said:

"The queens and bees (had they all been alive) were not what I ordered, and can be of no use to me as breeding stock; and, arriving as late as they did, they were too late for that purpose any way. The express charges on the shipment were \$18.13, which, added to what I paid you (\$10.00) makes a total of \$28.13. As the hybrid bees can be of no use to me, what relief can I expect from you?"

Up to this time not a word has been heard from Mr. McMurray.

Prof. Ralph Benton, of Berkeley, instructor in apiculture in the University of California, as well as Mr. Sinn, of Reedley, deputy foul-brood inspector, have authorized me to use their names as reference in making this report.

Reedley, Cal.

[On receipt of the above we wrote to Mr. McMurray, asking his side of the transaction. His reply follows.—ED.]

I hardly know what to say in regard to Mr. J. C. McCubbin's case. I want to please all my customers. I find it impossible, for some of them don't know what to expect. Take color, for instance. They expect queens to produce bees that are golden all over; but we haven't got to that yet. Now, in buying breeding queens, color has been one important point, and in breeding I have tried to improve. The first bees I sent out were to Medina to see what you thought of them. See a copy of your letter attached which I have on file.

Mr. McCubbin should have considered the express charges on bees shipped 3000 miles. That was his business, not mine. I don't claim my combs are wired, and to be strong enough to stand the rough handling of express companies. Read attached circular.

As for preparing bees for shipment, I think I understand that part. That is the first bad report on my preparing bees for shipment. Bees are shipped at owner's risk. I send the bill to customers signed up, so they can see, and may be save them a lawsuit and get beat in the end. I mean to do right with my customers; and if I am wrong will some one please correct me, and say what he thinks would be right between man and man. You will also find one of many letters I have on file. Read what this man thinks of my bees compared with those of another breeder he had bought a queen from; also, read the leaf torn from my circular, and see as a matter of business if I have made my points too strong.

Sliverton, W. Va.

T. L. McMURRAY.

[We presume there are no queen-breeders or shippers of bees who never receive a complaint. Sudden changes of weather often prevent prompt filling of orders; and requests for the return of money sent, or explanations, etc., pile up at such times until the breeder, who is meanwhile having all

he can do in the yard, finds it pretty difficult to keep up his correspondence, even though his intentions may be the very best. All this time the weather in the locality where the purchaser lives may be very fine, so that this purchaser gets desperate too.

In the instance above we do not know that Mr. McMurray should be blamed *entirely* for the dissatisfaction that arose. However, there are one or two suggestions that we should like to make that may serve to prevent, to some extent, similar trouble between other breeders and buyers of bees. As publishers we are often appealed to in cases like the above, and we have many times served as the go-between or adjuster. It is, of course, to the interest of the publishers as well as to the parties concerned that all differences be adjusted as fairly as possible, every thing being taken into consideration. We certainly do not like to refuse advertisements from reliable parties; but, at the same time, we do not like to continue the advertisements of dealers who may not be giving satisfaction. It is for this reason that we refer to the question again, with the hope that we may bring about a better understanding between our advertisers and their customers.

We wish to go on record as saying that unwired combs are not fit for shipping. They *may* go through all right, but there is very great danger of breakage. We regard the wiring of frames as a stitch in time, the negligence of which is penny wise and pound foolish, and the customer who orders bees on unwired combs loses more than any one else.

Other things being equal, the combs should contain no more honey than will be needed by the bees on the journey; for the heavier the combs, the more danger there is of breakage, and the higher the charges will be. In warm weather especially, when the wax is soft, there is great danger of the combs sinking or sagging out of the frames if they are heavy with honey. The point is this: The bees become excited, the temperature of the hive rises considerably, so that there is very apt to be trouble.

Any breeder is likely to err in judgment as to the amount of honey needed by the bees on the journey, for an unexpected delay in shipment may mean the consumption of all the stores, and consequent starvation. Rather more honey should be provided, therefore, than barely enough to last the bees if every thing should go all right; but, at the same time, if too much is allowed in the combs, there is danger of the breakage before mentioned.

Old brood-combs that contain a good many layers of cocoons are tougher and less apt to break in the extractor, and they are also less likely to break during shipment; and, if possible, such combs should be selected for bees that are to be shipped. Here again, customer and shipper may differ. The former wants light new combs, while the experienced shipper knows that the old combs are safe.

We do not think that bees should ever be shipped on partially drawn combs, especially those that are in unwired frames, for in addition to the fact that such combs are new and fragile, they are not firmly attached to the end-bars, and breakage is almost certain.—ED.]

MIGRATORY BEE-KEEPING.

Shipping Nuclei from California.

BY G. C. MATTHEWS.

It is quite a common thing for bee-keepers in Utah to ship nuclei from points in California in the spring; and, having engaged in an enterprise of this kind last summer, I think a description of my experience may be interesting. Usually, these ventures turn out profitably unless accidents, bad seasons, or bad management spoils the work.

We had 450 colonies of hybrid bees last year, some in good condition, but all rather short of stores for breeding purposes just before the orange bloom. I did not reach California until March 29; but we had a man there before I arrived. Because teams were hard to find, the bees were not all moved until the orange bloom was ready to open. That was error number one.

My partner, who had shipped several times, remained in Utah and left the making of the nuclei to my management; but because I was told to expect a six weeks' honey-flow I made plans for too many nuclei. As it turned out, the flow lasted three weeks, so we had to feed nearly 4000 lbs. of honey and syrup to get enough stores for shipment. Out of 1250 nuclei, over 100 queens failed to mate, and not sufficient brood was reared to make the nuclei strong upon arrival in Utah.

The nuclei were made on six combs in eight-frame and ten-frame single-story hives, the empty space being left for a clustering-place. This plan would work if the bees were young; if old, they need a clustering-place above the brood, because they worry so much that they generate enough heat to smother the brood.

From two to four frames of brood were put in each nucleus, and brood was afterward added or taken away to secure the proper strength. Then, just before shipment, my partner, who had gone to California, shifted the nuclei to get the flying bees in with the weakest one; and as a result some queens were killed.

We closed the hives at the entrance with lath, and put screens on top of the hives, leaving no clustering-place above the bees. But, first, cans for water were nailed to the sides of the hives and filled with excelsior. In these cans water was poured when the nuclei were placed on the car.

The season was a poor one for queen-rearing because of the short quick flow of honey, and by taking away queens poor cells were built by the bees. One should not

make nuclei until his bees have built natural swarm cells, unless he uses the grafting method.

The nuclei filled two cars; but in one car the entrances were not well closed, and the bottom-boards were not nailed with sufficiently long nails. As a consequence we lost many bees.

When we unloaded we found about 100 nuclei in this car smothered, presumably because they contained too many old bees and had not sufficient clustering-space. But, despite all these errors, one car of bees which was unloaded in good territory made some profit, while the other could have done nearly as well under conditions with an equally favorable honey-flow.

I am going to send another car of bees this spring from the same point from which I shipped last year; but I shall wait and tell more about it after judging my methods by results. While I know of shipments of last year which were less successful than my own, I also know of others that have been highly profitable, and believe all of them can be made so.

Morgan, Utah, Feb. 22.

HAND'S SYSTEM OF SWARM CONTROL.

How the Basic Principles of the System can be Used with Ordinary Hives with Fast Bottoms; it is as Good as or Better than Some of the Shake-swarm Systems.

BY J. E. CRANE.

I was somewhat disappointed after reading Mr. Hand's system of swarm control in the late numbers of GLEANINGS for 1910, and the editor's comments on that system, and the evident success of the system in the hands of an expert, to remember that my hives were all great clumsy chaff hives with fast bottom-boards, and that, so far as I was concerned, Hand switch-boards were out of the question. So I have been studying his system to see what good I could get from it without his switch-board.

First, and as a sort of cornerstone to the system, he tells us to get all colonies very strong early in the season—see page 719 of last year. This, certainly, is a good thing, and just as valuable to those who do not use a switch-board as to those who do. This scheme of strong colonies in the spring was recommended by Langstroth some fifty years ago, and by all intelligent bee-keepers ever since. To secure this he tells us that all colonies not strong enough to enter supers at the beginning of the harvest should be united with some other colony. Surely it does not require a switch-board to do this. I think there is a better way, however, than to unite weak colonies with others, as I shall try to show later.

Next he tells us, as another cornerstone to "swarm control," "to prevent strong colonies from contracting the swarming fever before the main honey-flow we give them a full upper story of empty combs above a

queen-excluder." Good advice, certainly, with his system or any other; and, better, it doesn't require a switch-board to practice it. This was advised by the editor of GLEANINGS a few years ago, but I fear it has not been fully appreciated. I practiced it on some twenty colonies, but they were not all very strong the past season, and I used supers filled with frames of wire foundation instead of drawn combs, as we were short of combs. Only two out of the twenty offered to swarm so far as I remember; but, goodness me! didn't they pile the honey into the sections after the supers of drawn combs were removed and replaced by supers of sections, and all without a switch-board!

Next he tells us that when the harvest is in full swing, and the top story is about half full of uncapped honey (assuming that each colony is provided with a switch-board) we will begin operations for the control of swarming (I thought the extra super on top was to control swarming), by placing the top story, bees and all, down upon the vacant side of the switch-board, and exchange the central comb for a comb of brood and bees, including the queen.

Now, this looks like a very simple thing to do, especially removing a comb from the super and exchanging it for a comb of brood, "including the queen." In practice I have found this removing the queen is not always so easy a matter when a hive is crammed with bees as it is at the height of the season, especially if you have hybrid bees or old queens. As a rule I had rather shake the bees from two or three brood-chambers at the height of the season than find one queen in a crowded colony—at least I can do it quicker. Surely it would be far easier to shake the bees from the two colonies of the twenty mentioned above than to look up the queens of the whole twenty as required by the Hand system.

As a "further aid to swarm control" he tells us that he raises the back end of his covers during very hot weather, which is a very proper thing to do. But this does not require a switch-board to do it, and is just as helpful in preventing swarming in a hive without a switch-board as one with that useful adjunct. I have been in the habit of raising my covers for more than twenty-five years in hot weather.

There can be no question, I think, but that there would be a decided advantage in being able to return all hatching bees automatically to the new hive after removing the queen and the mature bees. This can be accomplished, however, by placing the brood-chamber near the entrance of the new swarm, and then once in seven or eight days shaking all that can be spared in front of the new hive. The population can also be reinforced by giving combs of hatching brood.

But we are told by Mr. Hand that there is a loss of honey by shaking, or if the bees are otherwise unduly excited, of from five to ten pounds per day for a day or two. I beg leave to differ with him on this point, pro-

viding the shaking has been properly practiced.

The A B C and X Y Z (a very good authority) tells us that between nine and ten days from the time when the egg was laid one may find the bees sealing up some of the larvæ. I have repeatedly found many larvæ sealed up in eight days from the time a colony was shaken on to empty combs, or twenty-four hours ahead of time. This does not look much like "sulking." But if you shake a full colony on to foundation they are very likely to sulk; or if you shake a colony having an old or otherwise worthless queen you may expect poor results.

It is certainly some work to transfer supers from one hive-body to another once a week with a switch-board, and it is certainly some work to look over a yard once in seven or eight days to find those colonies preparing to swarm, and control them, without a switch-board. But in looking them over we have only to operate on those *preparing* to swarm, and on the whole it seems to me we can go through a yard about as quickly as though we had switch-boards to every hive. Certainly the no-switch-board plan would make no more work during the season.

If we find a colony preparing to swarm, if strong and with a good queen we have only to remove the brood-combs. Give them others without brood, and shake all mature bees, queen and all, in front. These brood-combs can be given to those weaker colonies that the Hand system would unite with others, and soon they are sufficiently populous to store in supers. If I find a colony with an old or defective queen I have only to pick her out and destroy all queen-cells at the time, and also eight days later. In another week I give a virgin queen and the swarming is over.

Thus I find I can build up my colonies strong in the early spring before the harvest. I can give them a super of combs to keep them from contracting the swarming fever, and also lift the covers during the hottest weather. I can also checkmate any colony preparing to swarm by removing queens or brood; and all colonies that do not care to swarm can work through the harvest with all the hatching bees to help fill the sections, and all without the bother or expense of a switch-board.

By these methods last season our increase was only about thirty per cent—hardly as much as we would have liked. We certainly did not have as many supers to handle as we should have had with switch-boards, and, as I think it over now, no more work, if as much, as though we had used the latest and most scientific and approved method of "swarm control" advocated by Mr. Hand. I shall not, therefore, weep over my misfortune in not having hives adapted to the "Hand method of swarm control."

Middlebury, Vt.

[Much if not all of what our correspondent says is true. It might be well to make a comparative test, and report results. We

will pay well for two or three articles, after such a test, detailing results. Referring to the tiering-up plan for swarm control, described by us some years ago, we may say we still believe in the plan for either the production of comb or extracted honey. It requires no change in hives, supers, or appliances, and it certainly does get the honey.—Ed.]

FOUL-BROOD ACT FOR BRITISH COLUMBIA

BY F. DUNDAS TODD.

The Province of British Columbia, Canada, fell into line with other progressive regions when the legislature this spring passed a very stringent foul-brood act. The Department of Agriculture turned its attention for the first time in its history to apiculture a year ago, starting out with a systematic enquiry as to the status of the industry. A full report forms the introductory chapter of a "Guide to Bee-keeping in the Provinces," recently issued as Bulletin No. 30 by the Department.

A question in the circular sent out resulted in the locating of one case of foul brood in the eastern half of the Province, the diseased colonies having been brought in by a settler from Ontario. As a radical measure the infected hives were destroyed.

Though all other reports were favorable, the Department felt it was wisdom to prevent rather than to cure, so it introduced and got passed a very drastic measure, which is modeled on that of Ontario, but, in addition, gives power to quarantine at the point of entry for nine months all bees that arrive on combs or with honey stores: also to destroy all used bee-appliances brought into the Province if they are suspected of conveying the germs of disease.

It is probable two inspectors will be appointed, one for the dry region, the other for the coast.

Victoria, British Columbia.

What would be the Advantage of Non-swarming Bees?

I notice in the article by Harry Lathrop, page 99, Feb. 15, he speaks of the advantages of bees not swarming. As I am something of a novice in the bee business I can not see the point. My bees are all in eight-frame Langstroth hives. I had 30 last May. They increased to 70 strong colonies, and produced 2700 lbs. of comb honey. How could I have done better had they not swarmed?

Kingston, Mich., Feb. 25.

J. W. ROSSMAN.

[We are not sure that a beginner can make increase in any better way than by allowing natural swarms, provided he has his queens clipped so that there will be no danger of losing such swarms. Your record of practically 40 lbs. of comb honey is good considering the increase that you made—from 30 to 70 colonies. In spite of all that has been written in regard to the prevention of swarming, this fact remains true, that no colony ever works better than a newly hived swarm.

On the other hand, leaving out the question of increase there is no question but that more honey can be produced if the bees can be kept contentedly at work without spending their time in preparing to swarm, etc. In out-apiaries especially, the question of swarming is a very grave one.—Ed.]



HIGH BLUFFS SURROUND THE APIARY OF S. D. HOUSE, CAMILLUS, N. Y.

AN IDEAL BEE-CELLAR.

The Advantage of a Permanent System of Ventilation that Provides a Constant Volume of Pure Air.

BY S. D. HOUSE.

[The tendency at the present time seems to be decidedly toward the production of extracted rather than comb honey among bee-keepers engaged in the business extensively. More and more is being written in regard to methods of management in extracted-honey yards; plans for extracting, straining, rendering, etc.; but in spite of the fact that it is more difficult to control swarming in comb-honey apiaries, comb honey as an article of commerce will never go out. When more and more go into extracted-honey production the price of comb honey will go up, and then the pendulum will swing the other way again, and more of the extensive men will come back into the ranks of the comb-honey producers. Of course, there are still a good many extensive comb-honey men who are learning all the time more and more of the short cuts. In this list Mr. S. D. House, of Camillus, N. Y., has been called the prince of comb-honey producers. He not only secures large crops, but he gets a very large proportion indeed of strictly fancy honey, his efforts having been mainly in the line of preventing the production of any thing except the "fancy" grade. His record at fairs is already well known.

When the editor last summer visited Mr. House and secured a large number of very fine photographs and the promise of a series of articles we felt we were to be congratulated on having provided for our readers an illustrated history of the best ideas that Mr. House could give. It is with pleasure, therefore, that we present this first article of the series.—ED.]

For some years, at all seasons, indoor and outdoor, at high temperature and at low temperature, I have given considerable attention to the consideration of ventilation and its effects upon bees. If we study the anatomy of the bee we find that the aerating system is very highly developed; as Cowan states, page 59 of "The Honey Bee," "The blood can be supplied with oxygen by numerous tracheae diffused throughout the body; and also, being oxygenated at last in proximity to the dorsal vessel, enters it to

be propelled to the brain, and from thence to every other part of the body." This shows that fresh air is necessary in order to keep the blood of the bee in a healthy condition.

There are so many evils arising from lack of pure air in cellars where bees are confined about three fourths of their natural life that I do not wonder at our being confronted with the problem of spring dwindling when bees with a low vitality soon succumb to various sudden changes in the weather during the early spring months. The only wonder is that so many bees withstand the treatment given them during their confinement in cellars under such varying conditions.

How many times have we heard a bee-keeper say that his bees wintered well, but they did not do well through the spring months—they were short of honey, or the honey was bad, the weather unfavorable, or what not, when, in reality, he was making guesses without stumbling upon the cause of at least part of the trouble, which, I believe, was too low a vitality of the bees! Their energy had been overtaxed to maintain life during confinement, and they were an easy prey to adverse conditions. How many of the human family confined under similar conditions the same length of time would have good health and energy to do a spring's work?

The question of how much ventilation to give is one that must be worked out for every cellar. There should be an abundance of fresh air going into the cellar every hour of every day, the amount being governed by the area of the cellar and the number of colonies confined therein. If the space is well filled, the volume of air should be greater than if but partly occupied.

Dampness in bee-cellars, with poor ventilation, makes one of the worst combinations. It causes the stores to become thin,



S. D. HOUSE IN HIS BEE-YARD, WITH CELLAR AND WORK-SHOP IN BACKGROUND.

and often nearly ferment. Thin stores consumed by the bees soon cause the intestines to become distressfully gorged; and, as a result, the whole organism is out of gear. Soon the bees commence to discharge their feces, usually outside of the hive first. When they have reached this stage I would advise a cleansing flight the first sunshiny day when the temperature is above 50 degrees in the shade. During the time the bees are out, the cellar should be cleaned thoroughly, and arrangements made for more ventilation. Even though the temperature goes down as low as 34, no harm will come if it is caused by cool fresh air; otherwise a low temperature in a damp unventilated cellar is very disastrous to bees.

Again, a cellar with too high a temperature, say above 52 degrees, will cause too much activity on the part of the bees, thereby using up their energy and vitality. They may not show this to a casual observer; but by putting side by side two colonies of equal numbers, one being wintered at a temperature between 38 and 40, the other at a temperature of 50 to 52, one will find that the one wintered at the low temperature will not dwindle nor die as soon as the one wintered at the higher temperature.

What I consider an ideal cellar for wintering bees is one 24×14×8 feet, built in a side hill if possible, with a dirt floor. The wall should be built of concrete, 15 inches thick, and the trench underneath should be at least one foot deep at one of the back corners, and graded so as to carry the water each way to the lowest point in the front corners. This trench, if filled with loose stones, will insure a dry cellar. In front of

my cellar I have a room 8×24 feet which is heated by steam, and used as a workroom in winter and a storeroom for extracted honey in summer. Three sides of the cellar are under ground, and the front wall is protected by the workroom.

There are two systems of ventilation. Fresh air is admitted between two floor joists, and enters the workroom at the further end. This room is lathed and plastered, and an opening near each end leads into the cellar.

The other ventilator takes the air from the outside directly, and enters between two overhead joists, the

draft being broken by means of boards nailed crosswise, the first one being nailed close to the bottom of the joist, and extending to within two inches of the top, and the next one close to the top with a two-inch opening at the bottom, and so on. These break the direct draft and give the air time to warm somewhat before it reaches the cellar.

Upon the front cellar wall, and extending down into the cellar, is built a brick chimney into which a stovepipe enters. I use a six-inch pipe which extends to within 18 inches of the cellar bottom. The chimney extends upward 24 feet, giving a good draft. It should be remembered that an outward ventilator will not take out any more air than the intake ventilator passes in.

These different ventilators are always open, and the air in the cellar is free from all odor, while the bees are very quiet. I have often spent fifteen minutes in the cellar with a lighted candle, and have not heard one bee leave the hive. Why? Because the bees are in a normal condition. It's the abnormal condition of the atmosphere in the cellar that makes bees active and uneasy. Spasmodic ventilation is very bad, as it causes greater activity, which demands more food, thus filling the intestinal canal and causing disaster.

There is a honey-house over all, 24×24 ft. with an attic above for storeroom. Between the cellar joists, $\frac{3}{4}$ -inch strips one foot apart are nailed to the floor of the room above, and to these strips lath and plaster are applied, thus giving a dead-air space between the cellar and room above. The temperature of the bee-room is quite uniform at 42.

I have known the thermometer to register near 78 degrees outdoors for a week, and not go above 44 in the cellar during the same time. Bees that have had proper ventilation during the winter will not dart out of the hive when the doors are opened in the spring, and, after being placed on their summer stands, do not rush out for a flight as if crazed by a scent of fresh air.

We enter this upper room on a grade, and also the lower room and cellar at grade. In Fig. 1 the door at the left enters the second floor; the door to the right (partly back of the operator) leads into the workroom, and on into the cellar beyond. Figs. 2 and 3 show the high bluffs surrounding the apiary, also the surface of the yard, which slopes toward the honey-house.

Camillus, N. Y.

BOTTOM VENTILATION TO PREVENT SWARMING.

BY E. E. COLIEN.

I'm a young bee-keeper, though past 65 years of age, and find much pleasure (and profit too) in the occupation. I commenced four years ago last June with two colonies. The first year, by natural increase, I doubled my stock. The second year I again doubled, and the third year I doubled again plus one,

making 17 colonies. The fourth year, after losing several swarms that escaped to the woods, I cellared 34 colonies, six of which were late swarms that I fed up in September. The spring of 1910 found me with 32 colonies in good condition.

With the advent of settled warm weather, and the first appearance of white-clover nectar, I raised every hive at the four corners on $\frac{3}{8}$ -in. blocks, and left them so to the end of the honey-flow. Each hive was shaded from 9 until 3 o'clock.

A near neighbor, Mr. L. W. Eastling, who commenced bee-keeping about the time I did, thought to try the ventilation plan too; but, fearing bad results by going the full measure, he raised his hives at one end only, and only $\frac{1}{2}$ in. by way of experiment. Now note results: My 32 colonies gave me only 5 swarms, rousing big ones, one of which produced 30 lbs. of surplus besides filling the brood-frames completely; and this in the shortest honey season on record here. My aggregate of surplus honey for this season of drouth, without a parallel, was a little over 1000 lbs. of fine white-clover and basswood honey, and all the hives well filled with winter stores. My friend Mr. Eastling, with just the same number of colonies, also cellar-wintered, and all good strong stocks in the spring, was forced to care for eleven swarms, and lost a number that flew to the woods. He estimated his surplus at 700 lbs.



E. E. COLIEN, MANAWA, WIS., WHO HAS BEEN TRYING BOTTOM VENTILATION TO REDUCE SWARMING.



Fig. 25.—Saw and cabbage palmetto on the east coast. The view is from Turtle Mound, 42 feet high, looking south, and shows the Atlantic Ocean in the distance, and the Indian River north, on the right.

Now, do not the foregoing facts prove quite conclusively that ventilation does prevent swarming very materially, and in proportion to the amount of ventilation as well, and also increases the production of honey?

Again, please note that, while Mr. Eastling and I had, say, from 30 to 40 per cent of a fair crop of honey, and hives well stored for winter, our immediate neighbors had but little surplus honey, and some none at all; and their bees, many of them, had to be fed for winter.

Another new departure we tried was to put the new swarms in the place of the old hive, removing the parent colony to a new location. This method, too, proved effective in that not an after-swarm issued, although our hives were let down for fear of robbers, the colonies being much depleted.

Now, although I consider the result of our experiments in ventilation to restrict swarming and increase honey production very successful under the circumstances of season

and location, I would advise others to go slow in experiments along these lines. I have given results that are very gratifying; but, as before observed, I am not prepared to give full and exact reasons therefor. It may be that we were fortunate to conduct our experiments in an exceptional season, and that the extreme drouth and steady high temperature prevailing were the prime factors in our successful venture; and it is quite possible that, had cool weather prevailed, and the season proved a wet instead of a dry one, the trial would have proven disastrous.

Therefore, for my own part, upon careful reflection, unless I receive more light on the subject regarding such possibilities from some veteran in the business I feel that I shall venture less another year, well knowing that a season like the one just past is not of frequent occurrence.

Considering Mr. Scholl's method, page 593, Sept. 15, 1910, it strikes me as an inter-



Fig. 26.—Saw and cabbage palmetto viewed from Turtle Mound but looking toward the north.

mediate plan of ventilation, safer and far easier of application than the four-block system. By his plan one could go the rounds of a yard in short order, giving moderate ventilation early in the season, and a second round as the season advances, increasing or decreasing the openings as the prevailing temperature might demand.

Then, too, this system offers another advantage over the four-block way, in that the entrance remains where it is, while by the other method the entrance is all around, obliging one to work quite frequently in the line of flight of the bees, which sometimes proves unpleasant.

THE MELTED-WAX PLAN FOR PUTTING FULL SHEETS OF FOUNDATION IN SECTIONS.

Now, for the benefit of those finding trouble with foundation-fastening and crooked combs, I wish to say that the Yoder method

pers to aggregate within $\frac{1}{4}$ lb. as many pounds as there were sections, the lightest one weighing 14 oz. Another lot of 25 sections weighed 26 lbs., and not a section below one pound.

Manawa, Wisconsin.

BEE-KEEPING IN FLORIDA.

The Surplus-honey Sources.

BY E. G. BALDWIN.

Continued from last issue.

9. Black mangrove (*Avicennia nitida*), a tree of the coast lands that grows only on soils overflowed daily with the salt seawater. Fig. 6, foreground. It will not grow unless it has its daily foot-bath in brackish water. It grows on both east and west



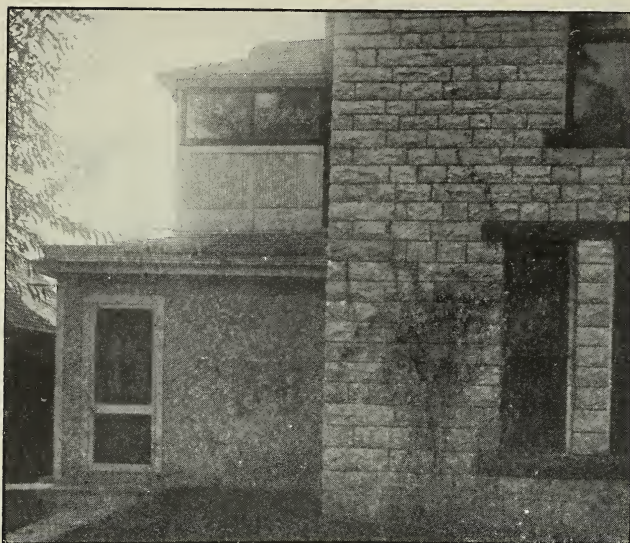
Fig. 6.—Black mangrove on island off shore of Tarpon Springs in the Gulf of Mexico.

is the panacea for these tribulations. I have found this way of putting in foundation, full size, in the sections the most satisfying and easiest by far. The sealing holds the foundation securely in place, while supers are toted about before being finally placed upon the hive; and it appears to me to be the key to the production of the finest even-weight sections of honey.

SEPARATORS NOT USED.

I have done away with separators entirely; and by carefully placing (in fact, packing) the sections closely together in the supers I find no trouble at all in removing them, the bees having but little chance to stick in any glue. To this manner of putting in sections, and the full-sized foundation, I ascribe the beautiful cakes of honey my bees are turning out. By actual weight I found two su-

coasts, though the yields from it on the west coast have never equaled those on the east. There are two mangroves, red and black, that are very common, both growing side by side. The black is the only one valuable for honey. It flourishes best on the keys (and adjoining mainland) that skirt the coast from Tampa on the west to Ormond on the east coast; does not thrive north of the 29th parallel. The honey from mangrove is white, probably the whitest honey in the State. The body is rather thin, though better on the Keys than on the mainland. In flavor it is very sweet and mild, with just the barest suggestion of a salty nature that is not at all objectionable. It is usually pronounced first-class, and easily ranks with the four best honeys of the State—I mean orange, palmetto, tupelo,



FOSTER'S OUTDOOR SLEEPING-ROOM OVER THE KITCHEN.
SEE PAGE 219.

and mangrove. Up to the year of the big freeze in 1895 it was the greatest honey-yielder known to the apicultural world, barring none. It is also a very interesting plant for many other reasons.*

10. Sensitive pea (*Chamaecrista*), commonly called partridge pea, because its seeds are so relished by the quail. It is a tough weed of the senna family, growing all through the high pine lands of the northern half of the peninsula, in great abundance. In summer, here, for example, the woods are yellow for miles with it as far as the eye can see. It grows from two to three feet high, as Mr. J. J. Wilder, of Cordele, Georgia, has already pointed out in these columns. It has a very long bloom-period, from July to mid-September, and yields honey every year unless the summer rains are too heavy, as was the case the past summer. Then its quality and quantity are inferior. The honey has a very pretty hue, light amber and very

clear; in body it is rather thin, and the flavor is strong to one accustomed to milder types; would probably sell better as a comb-honey product than as extracted honey (see later notice of this plant).

11. Cabbage palmetto (*sabal palmetto*); a tree growing from 20 to 30 feet high, with spreading top and drooping leaves, huge and fan-shaped (see the background of Fig. 6, and also the foreground of Figs. 25 and 26). The blades of the leaves are plaited in the bud, forming an imbricated covering over the trunk for many feet below the top, gradually falling away as the tree grows higher. Its blossoming time is from mid-July to

the end of August. The blossoms are huge ostrich-like plumes, six to eight feet long, drooping from the same center as the leaves, densely covered with small greenish-white blossoms, very aromatic. They are subject to blight, however, from too much rain or too little, and so it is not counted on often-er than one year in three. It yielded profusely in 1907; again this year (1910). When it does yield, it is always heavily. Its habitat coincides pretty nearly with that of the saw palmetto. However, it reaches its most



OUTDOOR SLEEPING-ROOM ON SIDE PORCH. SEE PAGE 219.

*Readers of GLEANINGS who may be further interested in this rare plant will do well to consult Dr. Wilson, of the Commercial Museum, Philadelphia, who is a recognized authority on the subject.

picturesque height on the hummock lands of the coasts and Keys in the southern part of the State. It is cultivated very generally, however, all over Florida as an ornamental tree. The honey is almost water-white, clear and translucent. The body is not so heavy nor thick as that of saw palmetto, nor is the flavor considered so fine, though extremely mild. I sampled some pure cabbage-palmetto honey this year from the apiary of Mr. I. T. Shumard, Osprey, Fla., and can attest to its excellence; but the average palate would choose the saw palmetto. It requires good handling to prevent its fermenting, and often froths in the combs on uncapping. The frothing entirely disappears, however, on standing a few hours. In the vicinity of Hawks Park, Fla., this honey comes at about the same time as the black mangrove, so that neither can be harvested separately. But the blend is a fine combination, and won signal praise from the father of modern apiculture, L. L. Langstroth himself, as the following letter from him attests. Mr. W. S. Hart had sent some samples of the blend of cabbage-palmetto and black-mangrove honeys to Mr. Chas. F. Muth, of Cincinnati. Mr. Langstroth secured a smaller sample of this honey from Mr. Muth, and wrote him the following letter:

Friend Muth:—I have delayed giving you my opinion of that Florida palmetto honey till I got the verdict of others as to its merits. In color it is unexceptionable, and its flavor is very pleasant. I am not sure but the majority of consumers will consider it equal if not superior to white clover. Our Southern friends are to be congratulated on being able to supply our market with such a choice article.

Oxford, O., Nov. 16, 1882.

L. L. LANGSTROTH.

This combination of honeys constitutes the bulk of Mr. Hart's surplus.

12. *Manchineel* (*Manchineel hippomane manchinella*), a tree of the spurge family; is called also "poison wood," from a milky sap secreted from the bark. It is one of the largest and most common trees on the southeast coast; reaches its greatest beauty on the Keys there, though it is found on the mainland as far north as Palm Beach. In certain years it is a very heavy yielder of



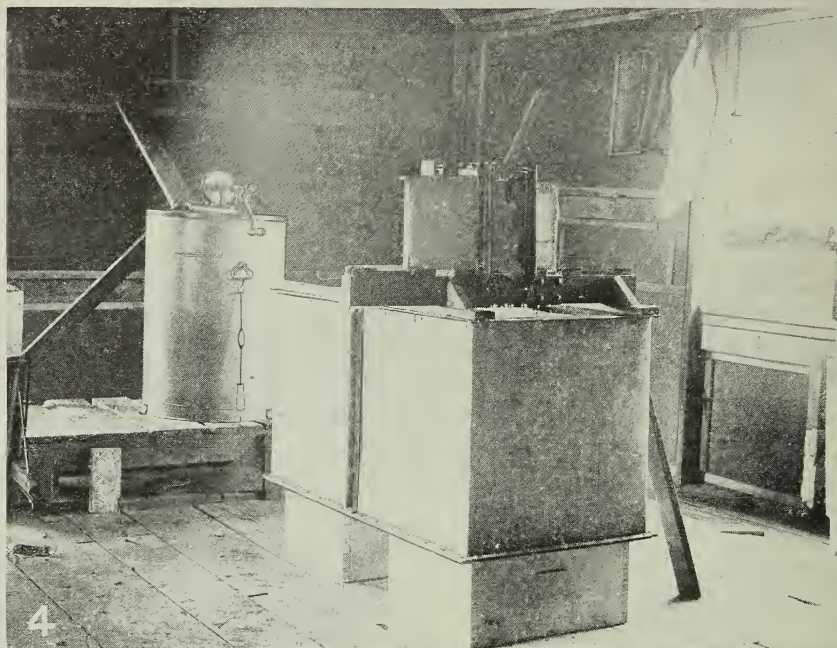
BLUEBERRIES FROM BUSHES GROWING IN GOOD SOIL.
SEE PAGE 223.

nectar. It blossoms always in connection with the two following sources:

13. Dogwood (*Cornus Florida*), a flowering tree found along the Keys and off the southeast coast, especially the former.

14. Pigeon cherry, also in same locality as two former. All three of these bloom about simultaneously, nor can their honeys be obtained separately. Mr. O. O. Poppleton is the only bee-man who attempts to reap a harvest from these three sources, and he does so by means of his traveling apiary. He pronounces the combined honey from them of good flavor, excellent color, and good body. His crop last year from the three was 28,000 lbs.

15. Fall flowers (including wild sunflowers, goldenrod, asters, and thoroughwort). Of these, none are much of a factor except, possibly, the wild sunflower, in the section lying east of Miakka River, between the palmetto section and the Everglades. There it is very abundant, and seems to be a good yielder. But the honey from all is much like that from the northern flowers of autumn—rather dark and strongly flavored.



E. D. TOWNSEND'S EXTRACTING-HOUSE, CHARLEVOIX CO., MICH., SHOWING FOUR-FRAME NON-REVERSIBLE EXTRACTOR, THE MCINTYRE UNCAPPING-BOX, AND THE FERGUSON UNCAPPING-MACHINE.

None of them are extremely important in the surplus field. The wide range of honey-sources above named makes a *total* failure in any one year for the whole State practically impossible. For instance, the past year has been a very poor one here in De Land. It was a good one on the southwest coast and in the northwest. Taking the State as a whole, the yields are much more reliable than in the Northern States.

Notice that eleven out of the fifteen sources enumerated are *trees*, not plants. Can not the claim, therefore, be justly made that Florida is a land of tree honey? Can any other State say the same? Observe, too, that there are four strictly *first-class* honeys—orange, saw palmetto, tupelo, and black mangrove, to say nothing of the manchineel and cabbage palmetto, which would almost touch high-water mark for quality. Show me any other section that can boast so many choice honeys to its credit. These four honeys are all of great commercial importance, and are shipped out of the State by the ton; and yet the market quotations on honey often read "dark and southern." The middlemen have a large load of accountability for the "black" name they have given the Florida honeys—dumping them all in as "Southern," with no effort, apparently, to classify or differentiate; in fact, it appears that they may have done so purposely in

order to secure the first-class article at the dark-honey price. But better things are in store. Daylight is dawning. The bee-men are learning how to sell to better advantage; are beginning to think for themselves; more and more the buyers of choice table honeys are reaching down into the peninsula for the excellent table honeys that are produced here, and better prices are ruling.

De Land, Fla.

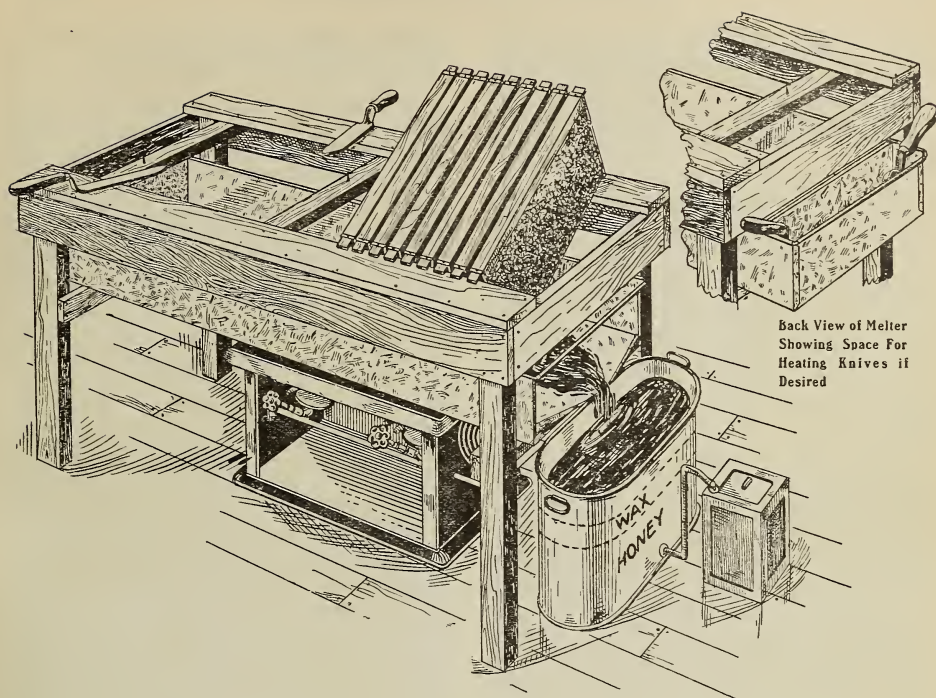
To be continued.

BEE-KEEPING FOR BEGINNERS, ILLUSTRATED.

The McIntyre Uncapping-box vs. a Large Capping-melter.

BY E. D. TOWNSEND.

The engraving in connection with this article shows one corner of our headquarter honey-house in Charlevoix Co. This building is 18×26 feet, but is built on the same plan as the one at the Springbrook yard, described in my last article. Unlike the smaller 12×16 extracting-houses, the inside arrangement is such that the uncapping-tank, extractor, etc., are away from the walls, so that the operator can get all around them, this arrangement being more convenient where there is room. We were for-



Back View of Melter
Showing Space For
Heating Knives if
Desired

tunate in securing this structure already built and located just where we wanted to place our bees at this point. The wood-chopper was desirous of selling, because the timber had been cut back so far that he either had to sell or move. The partitions, windows, and old doors were removed, and our regular shop windows put in at each side, and then a wide panel door was located near one corner in the end, just to the left of the extractor as it stands in the picture.

After all the repairing was done, the inside walls were tar-papered as usual to keep out robber bees. We have never been able to find any other paper that the mice will not gnaw, thus making it necessary to do repairing each spring. The tar paper lasts for years, and the only time it requires repairing is when the building is taken down, and moved and set up at a new location. Then, of course, some of the paper is torn.

In the foreground of the picture is one of our McIntyre uncapping-boxes. This tank is one of the first ones purchased, and is 4 ft. long, 2 ft. wide, 2 ft. deep. We now buy them the same width and depth, but 6 ft. long, as the shorter ones do not have capacity enough to drain the cappings thoroughly before they have to be emptied. The tank is built of galvanized steel, and has a honey-gate at the opposite end near the bottom.

A slatted bottom holds the cappings two inches from the main bottom of the tank for drainage. This is built of $\frac{3}{8}$ -inch-square pieces running crosswise, $\frac{1}{4}$ inch apart, and nailed to two longitudinal pieces $\frac{3}{8} \times 2$ inch-

es, and $\frac{1}{2}$ inch shorter than the length of the tank inside, so that the framework may be easily lifted out to wash, etc. We build these of white pine, as this is the best material.

At the top of the tank a framework is built of $\frac{3}{8}$ pine, the long pieces at either side being 3 inches wide and a little longer than the length of the tank, so they will rest on the ends. Two cross-pieces of the same material, but a little shorter than the inside width of the tank, are nailed to these long pieces, quite near each end, in such a position that they will just fit up against the ends of the tank inside. The open space between these two long pieces is $18\frac{1}{4}$ inches, this space being just right for a Langstroth frame to hang as in a hive.

The Ferguson uncapping-machine is shown in position over the tank. This will be discussed in a future article, as space forbids it in this.

In order to secure good drainage of the cappings, they should be chopped fine occasionally, and spread out evenly over the bottom. This should be done more particularly at night when the day's extracting is over. Each morning, before beginning another day's work, the dry cappings left over from the day before are forked up to one end of the tank, so that the new wet cappings do not have to drain through those already nearly dry. When the tank is so full that good drainage is no longer possible, it is emptied. For the nearly dried cappings removed from the tank, a sugar-barrel is prepared by boring holes in the bot-

tom, and these cappings pitched into it, the barrel meanwhile being suspended over a washtub to catch any further drainage, of which there will be considerable. For handling, cappings, nothing that we have ever tried equals a "D" handle six-tined fork.

There is one quite serious defect in the McIntyre uncapping-box. The honey that drains out of it after the first 48 hours from the time the cappings are sliced from the combs comes so very slowly that it is stale and unfit for table use. This, with what we take from the cappings that go into the capping-melter later, amounts to 2½ per cent of the crop extracted, and this amount has to be sold at about two-thirds price (this applies to the better grade of white honey; with low grades, there is not so much difference).

After all the honey is drained out we transfer them at our leisure, after the season's work is over, to a large capping-melter made along the lines shown on page 555, Sept. 1, 1910, and also shown in the accompanying drawing. After the wax congeals, the honey is drained and canned, and it then generally goes for the baker trade. We have never found a melter that has handled this work as well as this one; and, although we have never tried it for handling cappings direct from the knife, we expect to next summer. At that time, if it works as well, and I see no reason why it won't, we will discard the McIntyre uncapping-box entirely. The melters that we have tried before have been little affairs, not adapted for our extensive runs, and we had about decided there was nothing quite as good as the McIntyre box until we tried this new melter.

FOUR-FRAME NON-REVERSIBLE EXTRACTOR.

The extractor shown in the engraving before referred to is of the new four-frame non-reversible type. Its features of merit are portability (the weight being only 80 lbs.) and durability. It is built on the same principle as the old Novice that was noted for its long life; but, having twice as many baskets, the capacity is, of course, greater than the two-frame Novice, and there is no reason why it should not last fully as long. A disadvantage is that the combs have to be lifted out by hand and reversed, and this takes some more time, but not so much as one would think at first thought; and the extra time is almost offset by the ease and rapidity with which the reel may be turned. The baskets being near the center, the crank starts more easily and turns with less effort, so that time is gained, as it does not take as long to free the combs of honey as with the four-frame automatic.

There is another serious disadvantage that this extractor has—the centrifugal force drives the combs into the wire so hard that combs that have not been used for brood-rearing are often broken when removed from the baskets for reversing.

While we shall probably continue to buy the four-frame automatic extractors for general use, this little portable machine will fill

a long-felt want for outyard work where not too much extracting is to be done.

Remus, Mich.

[We note what our correspondent says in regard to the last honey that drains from the cappings being stale and unfit for table use, and we wish to mention what we call "drip honey" that drains from the cut pieces of comb honey that we prepare for the individual-service trade. This honey drains away very slowly indeed; and, being exposed all the while to filtered air, free from dust, it becomes very thick and almost waxy. It is true that the new "aroma" has been lost; but among actual consumers we have found that there are few who know any thing about aroma, and they all pronounce this drip honey the very finest that they have ever tasted; and if we had ten times as much of it, it would probably be eagerly taken and more yet asked for.

Honey next the cappings is always supposed to be the very best. If special pains were taken to strain it so that it would be clear, we believe the same price could be secured as for the rest of the honey, and possibly a little better price, if such were asked.

We presume that the reason why the combs are more mutilated in the small extractors is that the baskets, being so close to the center, offer little resistance, and high speed is easily attained. The centrifugal force is greater when the baskets are located further from the center; but with this latter construction it is not usually possible to whirl them at so great a speed, hence the centrifugal force in most cases is not quite as great. Theoretically, then, a machine with a reel of small diameter turned at something less than the maximum speed should have plenty of centrifugal force.—ED.]

NON-SWARMERS ALREADY POSSIBLE.

BY I. F. MUNDAY.

In GLEANINGS for November 15, page 736, Mr. Raleigh Thompson says, "he (man) will never produce a non-swarming race." I desire to assure him that 95 per cent of my colonies have not swarmed, nor have been disposed to do so, for quite twelve years. The hives have been occupied by bees constantly. Of course, no queen has lived for 20 years; but the queens have remained in the hives till they died, and others of the same kind have either been reared in them or have been introduced. Many of the combs are of a greater age than 12 years, yet no swarms have issued from these hives either in good, bad, or indifferent seasons; nor do I think they are likely to do so while managed judiciously with the object of obtaining honey for extracting. The little increase I require I obtain by means of nuclei transferred to full-sized hives and strengthened from sealed brood taken from two or three strong colonies. I keep from 80 to 100 hives in my apiary.

My hives stand on the same spot year after year, exposed to all weathers. I seldom interfere with them except to take their combs of honey to extract and put back again. My hives are of ordinary size, and have on them one or two honey-chambers or supers, full depth. From the 10th of November to December 20 I extracted 89 60-lb. tins of honey from 75 hives, this honey being produced within those dates. I tell you this to let you know that my bees are good. I think I can reasonably consider them non-swarmers.

Woodville, N. S. Wales, Aus.

OUTDOOR SLEEPING-PORCHES.

BY WESLEY FOSTER.

Colorado's climate is mild enough so that sleeping out of doors is pleasant nearly the whole year. The writer has used the outdoor sleeping-room shown in Fig. 1 (p. 214), every night except two up to this date, Jan. 5. This sleeping-porch, which is 8 feet by 14, is built over the kitchen at the rear of the house. The sides are sealed up about 3½ feet, and wire cloth encloses the space between this and the eaves of the roof. On the west there are two window-sashes fitted in to shut out the west wind; but the north and east sides are open except for the screen. On the east side, too, a screen door opens out upon the roof.

We have a very large porch running around three sides of the house. On the east side, it is made into another outdoor sleeping-apartment which opens into the downstairs bedroom. This porch has canvas curtains hung by means of rings sliding on ordinary gas-pipe—an arrangement fixed with material we had on hand, as the curtains were made from an old tent that the wind had torn badly. This downstairs sleeping-apartment is shown in Fig. 2. The east side of the house is hidden from the street by several pine and apple trees.

Outdoor sleeping-rooms are becoming so popular that houses sell much more readily if there is one or more of them, and it is common to see "want ads" in the dailies asking for accommodations with outdoor-sleeping facilities. It is a move toward saner and healthier living.

Boulder, Col.

[Occasionally some one objects because we give space once in a while to matters that do not pertain to bee culture; but we have always replied that GLEANINGS was devoted not only to the interests of bee culture but to the interests of the home as well. We feel that this question of sleeping outdoors is certainly a matter that should be of interest, not only to bee-keepers, but to all who value good health.

At our house we have been sleeping out of doors for about three years, winter and summer, and there are very few nights in the year when we do not enjoy the pure outdoor air. We began, first, on account of

my tendency to have catarrh and hay fever; but the results have been so highly satisfactory that we shall probably never sleep inside again, for any length of time at least. Colds are almost unknown; and when they are contracted they usually last not over twenty-four hours.

There is no object in sleeping out of doors if an ordinary room has one or more windows wide open, for the air is just as good. Oh! is it? Let me tell you this, and, if you do not believe it, ask some one who has tried it. There is no comparison at all between the air in an ordinary bedroom with three windows wide open and the air out of doors. There are very few rooms that have windows on opposite sides, and that is why the air is entirely different. No one who has ever slept *out of doors* ever says afterward that an inside room with windows open is just the same.

When it costs so little to try the plan, why will so many spend their money for patent medicines and cure-alls that are worse than useless? Our correspondent is right when he says that houses that are being built often have accommodations for outdoor sleeping-rooms; and we firmly believe that the time is soon coming when almost every new home will have at least one (and more often two or three) outdoor sleeping-apartments which will not be cumbered with dust-laden carpets, rugs, nor curtains.—H. H. R.]

KEEPING DOWN INCREASE.

Should this be Done by Hiving the Swarm
Back on the Old Stand after Destroying all
the Cells?

BY W. S. DAVIS.

I have 61 colonies, and have not had a swarm this season. I use eight-frame hives with Hoffman frames, and have them built up 2 and 2½ stories. The best hives are full, and hang out quite heavy. The honey-flow has been light, but some of them had a full-sized hive-body above the brood-chamber, nicely sealed up, so it would hardly seem to be altogether a shortage of food. The bees are in a yard among shrubbery, and some are in shade and some not. I have noticed little if any difference in this respect.

In 1908 this yard cast 70 swarms, or more than one for each hive. This was a fine honey year with me, and I made little or no effort to prevent swarming. Instead, as soon as a swarm issued and I had it safe I went through the parent hive, cut out all the queen-cells, and saw that no young queens were out.

It is surprising how soon they will hatch. Inside of an hour after the swarm had left, and while I was working with them, I have had as many as five in one hive.

After giving the parent colony an hour or two to find out their condition I put the swarm back. Where a man can be with

his yard all the time, this seems to me an ideal way to prevent increase, and at the same time get the full benefit of the increased energy from natural swarming. Every hive treated this way produced much more honey than where placed in separate hives, and the two counted as one. Colonies treated as I have outlined made no more trouble about after-swarms.

I am away from home quite a bit, and could not treat all this way; and the man I employed was unable to do it. He simply hived the swarms, and then I just doubled them up afterward. I treated about 30 this way, and did not lose 500 bees by fighting. This certainly was good luck, for, next year, when I tried to unite two weak colonies it resulted in the total annihilation of the weaker.

With the exception of a few ten-frame hives I use the eight-frame. They seem to meet my needs much better; and, while my hives all take Hoffman frames, the entrances are not all alike. I am unable to notice that the size of the entrance has much to do with swarming. I have not tried top ventilation or raising the hive off the bottom. I think both need close watching to prevent trouble.

Jerseyville, Ill.

[It is a question whether hiving back on the old stand, after destroying the cells, will give as good results as hiving in a separate hive beside the parent hive, then removing the parent hive altogether, after shaking its bees at the end of three weeks in front of the swarm. Of course this would call for the elimination of one of the queens, which ever might be the inferior. As a general thing we do not believe it is good practice to have a swarm back on the old stand on *the same set of combs and brood*. If any of our readers disagree we hope they will give the reason for the faith that is in them. —Ed.]

REPORT OF CALIFORNIA STATE CONVENTION.

BY MRS. H. G. ACKLIN.

The twenty-first annual convention of the California State Bee-keepers' Association was held in the Chamber of Commerce, Los Angeles, on the evening of Feb. 27, 1911, and held over to March 1st inclusive. President B. G. Burdick, of Redlands, opened the session, and was present at all the meetings during the entire time.

The attendance was a record-breaker, and enthusiasm never waned. An excellent program had been prepared by the executive board, and the president kept things going at such a lively pace that there was barely time to discuss more than the important questions. If every one on the program had been present with his paper, another half-day would have been needed.

Much committee work is always necessary at such conventions, and it seems almost a hardship that many of the members are

obliged to miss papers they would especially like to hear, just because of this extra work. Several sections in the constitution and by-laws were amended, which meant considerable work for that committee.

Our State society expects to occupy the same position in California that the National does in the United States. Provisions have been made for all other societies interested in bee culture in the State to affiliate with the State association on the same basis that the State associations go into the National. When that is accomplished our bee-keepers will be nearer a unit than ever before, and better able to demand protective legislation.

The report of the committee on honey adulteration was a revelation. The committee were unable to find spurious honey in this market, and were also unable even to conjecture what becomes of all the glucose that is shipped in, billed as syrup—sometimes as corn syrup. Who is going to be able to ferret out this nefarious business of adulterating honey? This same committee was continued, and we all sincerely hope they will succeed in running down the miscreants.

As usual at such times there was considerable discussion of bee diseases. The sections infected with European foul brood to the north of us are causing much uneasiness in our midst—especially so, as the claim is now made that those germs are carried by the atmosphere. The disease is coming along at the rate of twenty miles each year.

Great interest was taken in the subject of organization and coöperation. One can easily see that this is the one great object bee-keepers are working for. To have an organization similar to that of the orange-growers means untold benefits to the bee industry. But I will not discuss this subject now, as I went over it pretty thoroughly in the last issue. Mr. J. B. Neff's paper on this subject was excellent. A committee was named to look this matter up.

Many other subjects of vital interest to bee-keepers were discussed; and, all together, the session proved instructive and profitable. A committee of four took charge of the question-box.

Those on the program for papers were: L. L. Andrews, Corona, "Establishing an Apiary where there are no Conveniences."

Delos Wood, Santa Barbara, "Keeping Bees in Pioneer Days."

Albert Dodge, Pasadena, "Requeening an Apiary."

John G. Corey, Santa Paula, "Shade in the Apiary."

C. A. Wurth, Washington, "Queens."

J. W. Kalfus, San Jose, "Building up Bees for the Honey-flow."

S. L. Griggsby, "Non-swarming."

Louis Sinn, Reedley, "European Foul Brood."

C. C. Schubert, Santa Monica, "Deputy Inspectors."

Z. Quinsey, Ramona, "Way I Find Things in San Diego Co."

Fred A. Parker, Lompoc, "Apiculture in Santa Barbara Co."

J. W. George, Imperial, "How I Make a Crop of Extracted Honey."

H. F. Mellen, Acton, "Comb Honey."

Prof. Ralph Benton, State Normal, "European and American Foul Brood."

W. R. Wiggins, Los Angeles, "Fluctuation of Market."

A. Seligman, Los Angeles, "A Retail Honey Trade."

J. B. Neff, State University, "Coöperative Marketing."

W. H. Allen, Santa Paula, "How a Man of Small Means may go into the Bee Business."

T. O. Andrews, Corona, "A Ramble Extending Over Fifty Years."

C. B. Messenger, *California Cultivator*, "Selected."

M. H. Mendleson, Ventura, "Suggestions on Different Topics."

C. P. Chadwick, "My Experience."

E. D. Bullock, Redlands, "Flora of California."

J. M. Elliot, First Nat. Bank, "Honey as Bank Security."

J. W. Fenece, Newhall, "Importance of a Home Paper."

The President's address was timely and to the point, embodying many suggestions which, if carried out, will be of great benefit to the association.

The old officers and executive board were all reelected, and the time and place of next meeting will be decided by the board.

Glendora, Cal.

WINTERING A SURPLUS OF QUEENS IN ONE COLONY.

The Plan a Success.

BY G. W. JOICE.

I have often thought what a blessing it would be if bee-keepers could successfully winter several laying queens in the same colony for use the following season. This thought has led me to try, and in a way I have been successful.

In the autumn of 1908 I had ten extra laying queens which I wished to carry over for the following season. I knew that a trial was worth while. I didn't think that I could winter them in any manner at all. I selected two colonies of pure Italians (leather-colored), and tried the introduction of my pets (queens). I took the queen from each of the two colonies, as I would if I were going to supersede her, and began my attempt of introducing 12 laying queens to two queenless colonies. The queen from No. 1 was introduced with five others to No. 2; i. e., *the queens were all strangers to the bees to which they were introduced*. The queen from No. 2, with five others, was introduced to No. 1.

No. 1 accepted five queens, and in the spring of 1909 four were present, none the worse for their (and my) experience. No. 2

did better, crowned my success (?) by *accepting six and wintering the same to perfection*. All queens wintered thus have become queens of successful colonies—in fact, some of my best. These were all 1908 stock. I have never tried the wintering of older queens by this method until this winter. I have eight old queens in one colony in the cellar, four old queens and three young ones in another colony, and some young ones (all have been fertilized) in another. The winter of 1909 I *wintered eighteen queens in three colonies*. The queens are all in one cluster, without any division-boards, just as though they were ordinary workers.

Montpelier, O.

[We should be pleased to hear from any others who may have succeeded in wintering surplus queens without giving each queen a separate nucleus. With most beekeepers the plan has proved a failure. See reply to A. B. Marchant, page 227.—Ed.]

CARBOLIC ACID IN SPRAYING SOLUTIONS WOULD HAVE NO EFFECT.

BY B. C. AUTEN.

Anent the discussion as to the use of carbolie acid in spraying solution to keep the bees out of the poisoned blooms, as the rule is universal not to spray when the tree is in bloom, there shouldn't be any poisoned bloom. I think I get all the spray-machine and insecticide catalogs, or most of them; and the official publications and all (that I get) are positive in saying that trees should not be sprayed when in bloom. I am afraid you raise a smoke many times bigger than the fire. A man who doesn't care for the bees, and sprays during bloom, would not put carbolie acid in his spray anyhow. The other man can mend his manner of spraying.

As to the efficiency of the carbolie acid, however, I am positive that it would be of too little effect to pay for going to any trouble. I have bees and I do spraying. I keep my bees watered constantly by special appliances, and they utilize my devices. Nevertheless, though I keep a film of crude carbolie acid over my water-storage tank, the bees throng into it, cling to the sides, and alight on every floating stick or bit of scum, fall or are blown into the water, and are drowned in most distressing numbers. There is no stream or pond in the neighborhood, or they would probably drink somewhere else; but, my tank being the largest sheet of water in evidence, those bees which have not learned my watering-places, when they see the water in the tank they go for it, not considering whether there may be other water elsewhere. I do not think the acid would be any better a deterrent in the flowers where nectar is.

Moreover, no odor, when exposed to the air in as dilute a condition as the acid would be in a spray, will persist for more than a few hours at most. When a bee is right

thirsty or hungry, when it sees what it wants it goes after it where it sees it.

As to this matter of the fugitive character of the odor of any dilute material exposed to the air, I am well posted, having experimented with supposed rabbit-repellents for several winters, and tried nearly every bad smell in the chemistry, using them in mixture probably a hundred times as strong as could be done in the spray, and the smell of a thick wash of crude carbolic acid, whale-oil soap, and iodoform will persist for but a few days. Even gas tar added will not help much.

Carthage, Mo.

BEE-KEEPING AS A HOBBY.

Why Hives are Examined.

BY F. DUNDAS TODD.

Chapter Six.

At certain times of the year it is important that the bee-keeper know exactly the conditions that obtain inside the hive. For instance, in the spring, in the fall, and often just after the end of fruit-blossom, before the honey-flow starts, he ought to know without any doubt whether or not there is sufficient honey stores on hand. It not infrequently happens that a colony will make deeper inroads upon the winter stores than was anticipated, so that the bees are not in condition to take steps toward raising, not merely a big family, but a prolific one, such as is essential early in June.

When one keeps a careful record of individual hives he comes across features for which it is often hard to find an explanation. The condition of the honey stores in spring is certainly one of them. For instance, there may be standing side by side two hives that in September were apparently alike in numbers and amount of stores, yet at the end of March one will be in prime condition while the other may be on the verge of starvation, and even worse. At the close of fruit-blossom a similar condition may arise. One colony may have hustled enough during the period of bloom to have a surplus of food on hand, while its neighbor may have turned the nectar into more bees about as fast as it was brought in.

Again, it is essential to the existence of the colony that a queen be present at all times, or at least suitable conditions for providing a new one. But the mother of the hive is liable to die at any time from accident or disease, just as are other bees. When free flight becomes established at the end of winter it not infrequently happens that a colony has no mother, and is, therefore, doomed to extinction in a few weeks. Or she may survive the winter, but break down as soon as the heavy egg-laying period develops, when, of course, the bees will endeavor to raise a successor from the larvæ on hand. When such a condition arises before any drones are flying, the young queen

will not be fertilized, therefore she will be unable to populate the hive with worker bees, and, consequently, the colony will cease to exist in a little more than a month.

It is essential for the bee-keeper to know when such untoward conditions arise, so that he may better the working conditions, supplying food where such is scant, and utilizing queenless bees to the best advantage. Outside indications will often give him an inkling of the inside conditions; but exact information is obtainable only by an examination of the inside of the hive.

Leaving general terms alone, let us take a concrete case. Where I am located, the honey-flow is over by the middle of July (for two seasons there has not been any), and the bees then do their best with pickings from thistles and fall dandelions. In September they are fed the winter stores, and I jot down in my note-book the condition of each colony. When free flight comes in March, my attention is attracted to two colonies which we will designate A and B. The latter, on September 3, is noted as being very strong, and as having brood in two frames. Before the end of the month it is fed all the syrup it will take up; and since the queen is in her first season I naturally anticipate favorable conditions in March. But when other hives are busy, only a few bees are seen to issue from this one, so a quick examination is made, only to find that the total population consists of a queen and perhaps 200 workers. Not over a hundred dead bees are found inside the hive, so it is evident the population had run down rapidly in November and December, for on October 20, when the hive was packed for the winter, it is noted as being strong. Unless this queen is assisted by adding more bees to the hive the colony will soon be out of existence.

A was one of the best colonies in the yard. From a weakling in May an imported queen had made it a powerful hive in June; in fact, it was one of the few that gave a surplus, about 20 pounds of dark-colored honey, which was distributed to less fortunate colonies. On September 3 it was strong, had no brood in the frames, but the queen was present. The stores were almost at the vanishing-point, so it was fed all the bees could take up. On October 20 it was packed for the winter, condition strong. Later, dead bees were thrown out by hundreds, while even more were found on the bottom-board. This condition continued for several weeks, then stopped entirely.

In March its bees seemed rather disinclined to fly, and very little pollen was carried in; so the suspicion developed that it must be queenless. Then all at once it got very, very busy—so much so that robbing was suspected, therefore the entrance was contracted to about half an inch, then a little heap of flour was piled up in front so that every bee on leaving had to plow through it. In a few minutes I could see white-marked bees entering three other hives. A quick examination of A showed no eggs, no

larvæ, no fresh pollen (all suspicious signs), and no queen, but plenty of sealed stores and lots of bees. Next day a more careful hunt was made for the queen, but in vain.

The conditions now stood, one hive with a queen and very few bees; another with bees and no queen. The proper thing to do was to combine the forces, which was done.

This simple example is given merely to show the beginner why it is necessary to open a hive. The average novice likes to go through a colony just for the fun of it; later on he will have a definite aim which will be concerned with the food supply, the queen, or her progeny. Broadly speaking, the dates when the brood-chamber should be examined are: In the spring, a week or ten days after pollen is being carried in freely, the purpose being to learn if there are sufficient stores, and if a queen is present with enough bees to keep the colony alive; at the end of fruit-bloom, for practically the same reasons; at the beginning of the honey-flow, to look for queen-cells, and at intervals of a week for the same purpose; in September, to learn whether or not there is enough honey on hand to carry the colony over the winter. Special conditions may arise that will necessitate some one hive being overhauled more frequently; but let it be understood that the less one meddles with a hive in normal conditions before the beginning of May the better, because while it is weak the inmates have a tendency to ball the queen—that is, form a cluster around her when the frames are disturbed. So far my experience is that a queen so treated is apt to disappear in a few weeks at most.

Victoria, British Columbia,

SOMETHING MORE ABOUT BLUEBERRIES; BLUEBERRY HONEY, ETC.

BY A. E. WILLCUTT.

I was much interested in what A. I. Root had to say in regard to the blueberry, page 807, Dec. 15, 1910. Now, I have lived right among the wild-blueberry (?) fields all my life, and let me say right here that the blueberry bushes are trying to crowd us off from some of our best land—land that will, with proper tilling and fertilizer, produce as good corn as can be grown in any of the New England States; in fact, we have many acres of "high and dry" land well covered with blueberry-bushes, that might be made to produce good crops of most kinds, and right on such land is where we find our best blueberries. See illustration on page 215. Such bunches as this one are nothing uncommon. I took the picture of this bunch so it shows the berries about natural size.

During July and August of the past summer Mrs. W. and I picked and marketed 2000 qts. of these berries, and I would have picked more if I hadn't been taken sick. It does not seem to me as though the blueberry must have sour soil or mucky swamps to live in. They do, of course, live and

grow in wet sour soil in some places. I will send you some small bushes some time, if you care to try to grow them.

Don't you think those berries in the picture look well? If they have produced better ones in "captivity" I should like a few just now to eat. I have on my farm 30 acres more or less thickly covered with blueberry-bushes, and we have picked as many as 2500 qts. in a season. I have put stable manure around a few bushes, but could see little improvement.

The blueberry is a pretty good honey-plant, coming just after fruit-bloom. In fact, bees commence on the blueberry before the fruit-bloom is gone.

Swift River, Mass.

SWEET-CLOVER FOR HONEY-FORAGE AND FOR A SOIL-RENOVATOR.

BY HOMER E. BARTLETT.

So much has been said of sweet clover that perhaps another article is useless; nevertheless, beginners may not have read former articles who may read this and be profited thereby.

The yellow variety grows abundantly in this State, and in the streets of the town in which I live, and also along the roads in the country. I have seen it growing in the fields, but not long at a time, as it can not thrive where plow or mowing-machine is used, for, being a biennial, it must reseed the ground every second year. It can not do this when the land is plowed or mowed regularly.

As a honey-producing plant, the bee-keeper of South-Central Kansas can not well afford to be without it, as it is absolutely sure, according to my observation, and comes at just the right time—the vital time when the brood-nest is full of young—the time when fruit-bloom has gone and the first bloom of alfalfa has not yet come. I have even had my bees fill a super before there was a sign of bloom on alfalfa.

As a forage plant I have had considerable experience too. In the summer of 1909 I mowed all I could find along the streets and highways, and stacked it, thrashing it the next February. Although I had plenty of alfalfa for my horses, they readily ate the straw all up clean.

That same year I did not have occasion to turn my cow on pasture until the first of June. There were large patches of sweet clover in the pasture in full bloom; but in a couple of weeks my cow had it all eaten up, and there was plenty of grass there too.

In the last days of February, 1910, I sowed a small piece of ground to oats and sweet clover (white variety), and I got a famous crop of oats. I harvested them with a scythe so I would not cut the sweet clover too short, and later found I also had a splendid stand of clover. In November my alfalfa pasture frosted so badly that I had to take my stock off from it and put them on dry feed.

I fed my cows alfalfa hay until the first of December, when I began mowing the sweet clover and feeding it to my cows. The result was most gratifying, for the cows not only ate it readily, but it increased the flow of milk considerably.

As a benefit to soil I would only repeat what a professor in the college at the Kansas Experiment Station said in a leading Kansas paper. "As a soil inoculator, renovator, and builder, I know of no other plant or fertilizer that compares with sweet clover."

Whitewater, Kan.

DRAWBACKS TO BEE-KEEPING IN NEW MEXICO.

The Future of Alfalfa very Uncertain.

BY O. B. METCALFE.

As a result of the publication of some of my articles in GLEANINGS, letters of inquiry have come to me asking about New Mexico as a bee-keeper's paradise. It requires some trouble to reply, so I am going to give here a few facts which will answer some of these inquiries in advance. I do not mean by this, however, that I am not willing to answer further questions. If, after reading this, there is still some point on which an interested party thinks I might enlighten him, I shall gladly do so by letter.

As to yield per colony in the Mesilla Valley, a yard of good colonies a few years ago produced an average of about 50 lbs. of comb honey or about double that of extracted when the river did not go dry too early; but for the past few years the amount of honey yielded has not been as large, as the range is becoming overstocked. The above average is probably about equal to that of any other valley of New Mexico where enough alfalfa is raised to make bee-keeping as a business possible.

As to quality, our honey grades light amber to dark. We never get any water-white honey equal to that of Colorado, Utah, or the white sage of California; but it is of a fine flavor, except the fall honey coming from a plant similar to the goldenrod, which grows wild here and blooms late in the fall. The flavor of most of our honey is fine; but that is a point of little merit to the bee-keeper, as it is color that sells honey in these days, especially when it must be shipped out, as we have to do. I think at least 90 per cent of the honey produced in New Mexico is shipped, as we have almost no local market. Another drawback to our honey is that it candies quickly, so it can not be bottled very well.

As to price, our best comb sometimes brings as much as \$3 00; but that is for the first few cases only, and the main crop goes at \$2.50 and \$2.60. Extracted brings about 5 cts. in five-gallon cans, two to the case, and the cases of cans cost about 95 cts. laid down as local freight.

We have a high freight rate on bee-supplies, and the cost of living is much higher here than in the East.

Our principal nectar-producing plants are, first, alfalfa, which is sure to bloom for at least one cutting; and, second, mesquite, which is quite uncertain, as it may get frozen, or its bloom may be destroyed by high winds, entailing at the same time loss of a large per cent of workers which are also blown away. Just before the mesquite flow, the willow is a good honey-plant here if one's yard is situated near the river. Late in the fall it often yields nectar, especially if there is not a severe drouth.

Where an attempt is made to run for comb honey, the swarming, perhaps, bothers more here than in any other State, as the flow is so slow and so intermittent. In fact, it is not a good locality to run for comb honey at all, as there is such a large expense in getting a lot of sections and mounting them when the river may go dry, and the alfalfa fail to bloom enough to fill more than a few of them.

As to the future prospect for the bee-keeping industry here, nothing could be more uncertain, as we depend absolutely on the alfalfa for a successful yield, and there is already much alfalfa being plowed up to be replaced by such crops as onions, cantaloupes, lettuce, celery, etc. All of the more progressive farmers are saying that they must certainly find some other crop to grow before the water assessments begin coming in from the big dam.

This had something to do with the fact that I made a long trip last fall through the highlands of Mexico, looking for a new location to which to move our outfit. I did not, however, find a suitable location, and intend to stick it out here to the bitter end, so far as being crowded out is concerned. The same conditions would probably exist in all irrigated sections of New Mexico.

Lest some of my bee-keeping brothers who are trying to sell out here should brand me as a knocker I must sum up the best features of the place. First of all, we have mild winters, and do not have to put the bees in the cellar. Then every few days during the winter, sometimes every day, the bees can have a flight, so a comparatively weak colony will winter here, making the problem of increase easy because the honey-flow is long.

I have a scheme for helping myself and my brother bee-keepers. Any one intending to buy or to move here may, if he likes, write to me, tell me of the prospective location, and I will send him a list of the bee-keepers who would be his neighbors. From them he can learn regarding the average yield, whether or not American foul brood is running riot in that particular spot, etc. If he is thinking of shipping in a lot of bees, he is apt to crowd some one, especially if the location is worth having. If he is a fair-minded man he will be glad to know just how much he would crowd, and how his neighbors would feel toward him. If he

wishes to sneak in and pretend afterward that it was through ignorance on his part, he must do so under pretense of not having read this article. Further, I wish to say that any one who is thinking seriously of going into the bee business in this valley will be a welcome guest at my home in old Mesilla; and if I can be away at all I will show him the country and introduce him to the bee-keepers who are to be his fellow-scamblers for the nectar secreted on this bee-range, which is so bounded by the limits of irrigation.

Mesilla Park, N. M.

ADVERTISING HONEY.

BY WALTER S. POWDER.

This very interesting subject is now being discussed by many leading honey-producers throughout the country, the object being to learn whether an advertising campaign can be conducted successfully and in a way that will increase not only the demand for honey but the price. The subject is before the National association as well as before many State organizations; and when we speak of advertising we usually refer to printer's ink as applied to space in magazines and newspapers; yet there are many other ways of advertising one's business. We see a single magazine page for one issue, for which as much as \$5000 has been paid, and the advertiser continues to use the space regularly; for if he drops out for even one issue, those who look for the attractive engravings and artistic printing are sure to think that the firm has gone into the hands of a receiver, or that it is out of business. Those with experience in advertising have learned that, in order to get results, they must continue the space, no matter how small it may be. I have often wondered if the goods sold through extravagant advertising are not produced and sold at an immense profit—I even wonder if the shipping-box and the printed matter do not cost more than the goods. Just imagine advertising honey, and shipping everywhere at a margin of two cents or less per pound! The editor of the *Review* suggests that some one might put up a few paper honey-jars in a strong carton and advertise a dollar package of extracted honey. The idea is a brilliant one, but not practical until we have the benefit of the parcels-post system; for the different express rates to different points would make the project prohibitive. It is hard to understand why we are denied the benefits of the parcels post, especially when we consider how we are discriminated against. By way of illustration I would cite the following example: I can mail eleven pounds to almost any foreign country at a low rate; but if I wish to mail a package to Irvington, four miles distant, I must limit the weight to four pounds, and pay one cent per ounce. Surely the time can not be far distant when a thing so much in demand will be withheld.

Our downtown department stores spend thousands of dollars in newspaper advertising, and it is not unusual to observe the women turn to the advertising pages to see what bargains L. S. Ayres or Wassons will offer to-morrow for ninety-eight cents. The throngs in the stores are an indication that advertising brings results; but still other methods aside from the newspapers are used. We find the salesmen well trained, polite, tidy in their apparel, and they hand the package and change to the patron with a courteous "Thank you," or "I hope you will be pleased." That is good advertising, and worthy of imitation, even if one had nothing but an extracting-room and an occasional patron! Did you ever make a purchase where the clerk tossed your package to you, and then dropped your change on the counter, making it necessary to remove your glove in order to pick up the money?—Bad advertising.

I firmly believe that the best advertising a honey-dealer can do is to adhere to the finest quality of goods when wanted for table purposes. I consider it the best advertising in all the world; but it may be a slow business-builder. Another important feature is to have uniform quality—that is, not one batch of white-clover honey and the next day alfalfa or sweet clover. If one does this his purchasers will become suspicious; for the general public is unfamiliar with the different kinds of honey. Indianapolis is considered one of the best honey-consuming towns in the entire country; and yet conditions could be much improved if our retail stores were supplied with a better quality of honey. I am always interested in seeing the various samples that I find in our stores, and I am glad to say that many of them are excellent, and speak well for the bottlers. On the other hand, I often find honey that never should have been sold for table purposes—some that is seriously in need of being strained; some that is inferior in quality, and some that has probably been overheated in liquefying. I also find very inferior honey bearing the National label, with the bottler's name. I have no doubt that it is pure; but he who buys it will want no more honey on his table.—Bad advertising and its effect is felt by all concerned. What can organizations do in such cases?

The man who attempts the bottling business on a small scale has a hard row to hoe if he makes prices in competition with the man who buys his honey and glassware in car lots. He pays more for his honey, more for his empty bottles, and is then likely to find a lot of them broken, thus making it necessary to use a cheaper grade of honey in order to compete.—Bad advertising. Fortunately the bee-keeper who bottles his honey does not feel compelled to meet the competitive prices, but can realize a price above the standard because he has the bees, and this is a fine advertisement for his business. People are pleased to get their honey from the man who owns the bees; they want their butter from the man who has the

cows, and their eggs from the man who keeps chickens. People are glad to pay for these privileges. Let us imagine an apiary near Indianapolis, on a traction line or near a boulevard where many people pass. If the hives are nicely painted, the lawn well kept, and there are some pretty flowers, this alone would be about the best possible advertisement. The owner could readily realize 25 cents for every pound of honey produced, comb or extracted, and he would not have to deliver it, for people would come to his home and ask for the goods. I mention this as an advertising proposition after having visited many apiaries, some of which were beautiful, while others, I regret to say, were in wretched condition.

I know of several men who have been very successful in selling honey from house to house, and they work with two advertising propositions—one being quality, the other getting prospective purchasers to taste the goods. One of these agents, whom I had supplied with his honey, called at my own home, and, after explaining his errand, was told that we got our honey at Pouder's for 15 cents while his price was 20. He insisted that the lady taste it, however, and then said, "Now, can you get honey like that at Pouder's?"—Good advertising.

Indianapolis, Ind.

COLORADO BEE-KEEPERS TAKE, NOTICE.

Here is the bill before the Colorado legislature to place the inspection of bees under the State Entomologist, and also to provide for a division of apiary investigation at the Agricultural College. All Colorado bee-keepers are urged to lose no time in telling their legislators to get busy on this bill and put it through before the legislature adjourns.

This bill in the house is House Bill No. 532, by Mr. Skinner; in the Senate it is Senate Bill No. 430, by Mr. Casaday.

A BILL

for an act to establish a division of apiary inspection and investigation under the State Entomologist; to provide for investigations in bee culture and the inspection of bees for contagious diseases; to provide for the prevention and spread of bee diseases, and penalties for failure to obey the provisions of this act; to make an appropriation for carrying out this act and to repeal the law on bee diseases approved April 6, 1891.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF COLORADO:

SEC. 1. The State Entomologist is hereby authorized to conduct a division of apiary investigation and of inspection of bee diseases directly or through a deputy who is experienced in apiculture; the investigation to cover the introduction of nectar-producing plants, the agencies influencing the secretion of nectar in plants, and such other subjects as may advance bee culture in Colorado. The inspection shall extend to all parts of the State where bees are kept, for the prevention, eradication, or control of bee diseases.

SEC. 2. Every bee-keeper or other person who shall be aware of the existence of foul brood or any other infectious or contagious disease of bees, either in his own apiary or elsewhere in the State, shall immediately notify the State Entomologist, or his deputy in charge of apiculture, of the existence of such disease.

SEC. 3. The State Entomologist, or his deputy in charge of apiculture, shall, when notified in writing by the owners of an apiary, or by any bee-keeper, examine all reported apiaries; and, if any contagious disease is present, all others in the same locality not reported, and ascertain whether or not

any diseases known as American foul brood, European foul brood, or any other disease which is infectious or contagious in its nature, and injurious to honey-bees in their egg, larval, pupal, or adult stages, exists in such apiaries; and if satisfied of the existence of any such disease he shall give the owner or care-taker of the diseased apiaries full written, and printed instructions how to treat such cases as in his judgment seem best, and state a time in which his instructions shall be carried out.

SEC. 4. The State Entomologist, or his deputy in charge of apiculture, shall visit all diseased apiaries a second time, after ten days, and, if need be, burn all colonies of bees that he may find not cured of such disease, and all honey, combs, and appliances which would spread disease, without recompense to the owner, lessee, or agent thereof.

SEC. 5. If the owner or care-taker of any apiary, honey, or appliances where disease exists shall sell, barter, give away, or move or cause to be moved away without a written permit from the State Entomologist or his deputy in charge of apiculture, any diseased bees (be they queens or workers), colonies, honey, or appliances, or expose other bees to the danger of such disease, said owner or care-taker shall, on conviction thereof, be fined not less than fifty dollars nor more than one hundred dollars, or imprisoned not less than one month nor more than two months, or both.

SEC. 6. It shall be unlawful to move bees from localities where disease is known to exist, without a permit from the State Entomologist or his deputy in charge of apiculture. For violation of this act, said owner or care-taker shall, on conviction thereof, be fined not less than fifty dollars nor more than one hundred dollars.

SEC. 7. Common carriers shall not accept bees for shipment without a permit from the State Entomologist or his deputy in charge of apiculture. For violation of this act said common carrier shall, on conviction thereof, be fined not less than fifty dollars nor more than one hundred dollars.

SEC. 8. For the enforcement of the provisions of this act, the State Entomologist, his deputy, or his duly authorized assistants, shall have access, ingress, and egress to all apiaries or places where bees are kept; and any person or persons who shall resist, impede, or hinder in any way the inspection of apiaries under the provisions of this act shall, on conviction thereof, be fined not less than fifty dollars nor more than one hundred dollars, or imprisoned not less than one month nor more than two months, or both.

SEC. 9. After inspecting infected hives or fixtures, or handling diseased bees, the inspector or his assistant shall, before leaving the premises or proceeding to any other apiary, thoroughly disinfect any portion of his person and clothing, and any tools or appliances used by him, which have come in contact with infected material, and shall see that any assistant or assistants with him have likewise thoroughly disinfected their persons and clothing, and any tools and implements used by them.

SEC. 10. The sum of \$2500 per annum is hereby appropriated to be expended for this work under the direction of the State Entomologist to pay the salary of the deputy in charge of apiculture, the necessary expense in traveling, printing blanks and circulars, and in otherwise carrying out the provisions of this act.

The State Auditor is hereby authorized to draw his warrants upon the State Treasurer for the sum herein appropriated upon the presentation of proper vouchers, and the Treasurer shall pay the same out of any funds in the State treasury not otherwise appropriated.

SEC. 11. All acts or parts of acts in conflict with this act are hereby repealed.

SEC. 12. In the opinion of the General Assembly an emergency exists, and this act shall take effect from and after its passage.

Some time ago I sent to you for a sample of your white and yellow sweet-clover seed. After receiving the samples I sent them to Washington, D. C. The yellow hulled tested 99.71 per cent of pure seed. The unhulled white tested 99.11 per cent of pure seed. I think that is fine. I am inclosing you the sample that you sent me, and want you to send me 80 lbs. of the same lot, or some equally good.

Brooksville, Ky., March 13.

H. A. JETT.

Heads of Grain

from Different Fields

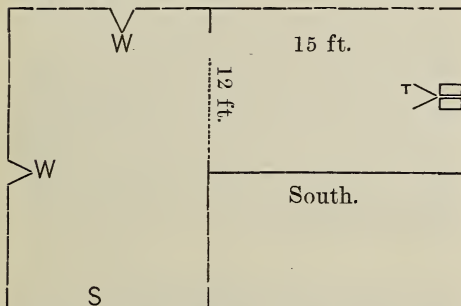
Mary had a swarm of bees;
And they, to save their lives,
Went everywhere that Mary went,
For Mary had the hives.

Ventilating a Bee-cellar; Sub earth and Ceiling Ventilation.

Will you please tell me a good plan for ventilating this cellar to secure good wintering? The cellar is under a dwelling, and is dry; stone walls; the temperature stays at about 40; but when it has been 12 below zero I have noticed it at 38. I expect to put a board partition at the dotted line, with a door leading to the other part, which is used for vegetables. I intend to use the smaller room, 12 by 15, for bees. If sub-earth tile ventilator is used, will it be necessary to have ventilation at the top also? Should it winter 200 colonies?

High Falls, N. Y., Feb. 20.

F. STOERER.



W, W, windows; S, stairs; T, inner door and outer trap-door.

[You do not state how many bees you propose to put in your cellar. With only a few colonies no special ventilation would be needed; but you might have to put in artificial heat—not a kerosene-stove, but a small coal-stove connected to a chimney to bring the temperature above 40 Fahrenheit. If you propose putting from 75 to 100 colonies in this cellar, the natural animal heat of the bees would raise the temperature without artificial means; but so many bees would make special ventilation necessary. We would advise a sub-earth ventilator of not less than a six-inch glazed sewer-pipe cemented at the joints, and not less than 100 ft. long. We would then have an opening near the ceiling into a live chimney, to create a forced draft. By a "live" chimney we mean one to which a stove or furnace is connected. Opening the door into the other cellar and leaving it open would help ventilate, especially if it were ventilated.—ED.]

Raising Queens above Perforated Zinc; Plurality of Queens for One Colony.

I have been reading Doolittle's book on queen-rearing, also Alexander's writings, and was feeling mighty good over them, especially on two things. One of them is where Doolittle claims one can replace a queen or supersede all old or worthless queens by raising a queen above the excluder, and allowing her to go below with the old queen. Then, to my surprise and sorrow, I saw your answer in GLEANINGS, Feb. 15, and from that answer I perceive you do not endorse it.

The other one is where Alexander claims the plurality of queens in one hive, going so far as to have fourteen in one hive, all working together in harmony. Your answer to this is, to try not more than one queen to a hive. Now, why do such men as Doolittle and Alexander give to the public such statements as this if their plans will not work? It is misleading, and I do not understand how you can recommend such books or writings. I am of the same opinion you are, for I do not believe that

either one of the two will work, as it seems to me it is against nature; and by your answering these two questions it has saved me considerable trouble, and, I think, some valuable queens. Why! if I could winter two queens in one hive, and keep them in the same hive up till ten or fifteen days before the honey-flow, I could increase my honey-crop fifty per cent, for this is exactly our trouble in this section. The honey comes on us before the bees can build up, and the two queen system would enable us to rear plenty of brood in time.

If you can suggest any plan whereby this two-queen system might be made to work, I should appreciate it. I should like to see what Frank Alexander has to say about it.

Sumatra, Fla.

A. B. MARCHANT.

[Both Mr. Doolittle and Mr. Alexander accomplished what they claimed; but neither of them knew at the time that their peculiar localities as well as the particular season of the year made their peculiar methods possible. In later years Mr. Doolittle added an appendix to his book, explaining that raising cells above perforated zinc was more feasible during a honey-flow, or when some nectar was coming in, than after it. Mr. Alexander did not live to continue his experiments. After his death, reports showed that others who attempted to follow his directions were not able to maintain a plurality of queens after the honey-flow. Mr. A., after his *white-honey* flow, and shortly following it, had another strong flow from buckwheat and goldenrod. This almost continuous flow for two or three times as long as the flow in most localities made a method of procedure possible with Alexander that was not feasible with the average bee-keeper with a short flow. If we get out another edition of the Alexander book we will put in a footnote explaining the conditions for a plurality of queens. However, notice what Mr. Joice has to say, page 221.

Right here a current periodical has a special province—namely, to correct and revise methods advocated in text-books that reflect the best practices at the time they were published. For that reason we sometimes correct in these columns certain practices that, in our judgment, will not work out in all cases as well as their authors believed they would.—ED.]

A Rational Plan to Cure European Foul Brood in the Spring, and Yet Secure a Crop of Honey.

The last of May I found two-thirds to three-fourths of my bees in five yards (250 colonies in all) badly infected, and this is how I proceeded: I took some healthy brood from the few not diseased, giving from one to two frames to each diseased colony after removing all the brood from it and replacing with this healthy brood. I also gave one to two empty combs. The rest of the space in the hives I filled up with empty frames and put on the supers. In nearly every case this was a cure—only a few developing disease later. In addition to all this I secured a fair crop of honey.

The diseased brood I stacked up on some very weak diseased colonies, three and four tiers high. Later on this was removed, and all foul cleaned out. Some of these colonies died out entirely by winter, and some of them recovered.

I am waiting anxiously for the coming of spring to see if the disease reappears. If I find it again this spring I shall proceed as above. The idea is, to get the diseased brood all away from the bees and give them a new start. This might help some other fellow this spring.

New Milford, Pa., Feb. 22.

F. W. DEAN.

[This plan embodies the principles of the McEvoy and the Alexander treatments. We see no reason why it should not work. We would not advise it for American foul brood.—ED.]

One More who Insists that Beet Sugar is as Good as Cane.

Noting Mr. Wesley Foster's comments in GLEANINGS for March last regarding the relative merits of beet and cane sugar, I wish to take issue with him on the subject. Unless both my text-book and my instructor in chemistry were in error, cane and beet sugar are identical in composition, except for from one to two per cent impurities—that is, they are each 98 per cent saccharine; and how Mr. Foster can get different tastes out of them is more than I can understand. Furthermore, there is no earthly reason why one should granulate sooner than

the other. I believe Mr. Foster must have gotten hold of some very fine sugar, and, because it dissolved on his tongue quicker than the other, he considered it sweeter. But the size of the grains is determined by the way the sugar is granulated in the factory, as one of the foremen in the Longmont sugar-factory has just explained to me, and the chemical composition has nothing to do with it.

To come now to the more practical side of the question, Mr. M. A. Gill, who fed some 10,000 lbs. of beet sugar last fall, showed me syrup in some of his hives to-day that had not granulated, and he did not use hot water in making the syrup.

As to the ideas of housewives, it is very unlikely that they can detect a difference between two substances that the best chemists declare to be identical; and I deem it very possible that prejudice may cut considerable figure in the matter. In reality, much sugar sold as cane sugar is doubtless manufactured from beets, and housewives never know it. I hardly believe a government chemist could detect the error in beet sugar labeled cane.

Longmont, Col., March 7. G. C. MATTHEWS.

As long as so many instances have been known of beet sugar having been fed to bees extensively, with no bad results, we must conclude that, for the bee-keeper at least, it is all right. The subject has been discussed pro and con for a number of years. Perhaps for the present, at least, it had better rest.—Ed.

Kings as well as Queens; Bees Drunk on Cider.

Would you Yankees like to know how we manage bees down here in Rockingham Co., N. C.? Here is how some of us try to do it:

To begin with, according to some of our oldest authorities our bees are better protected than yours, having a king as well as a queen, while the only drones with which we have to contend are those bees that have been so foolish as to have stung something. To prevent swarming, a string is tied around a hive half way from the bottom. I have been told this is a sure preventive; but after seeing one thus treated cast three swarms in as many days I am not so sure about it. In case of the death of a bee-keeper it is necessary that the bees be informed at once, else they speedily follow the fate of their master.

You may wonder that, following such methods as these, we should have any trouble, and yet we do. Last season was a great one for fruit, and much cider was made; consequently many bees were killed at the presses. Those that escaped stored no honey, and winter found colonies weak in bees and short of food. Very few colonies that were not fed survived, and I have no doubt that at least 75 per cent of all colonies that were in this county last October are dead. I am told that the reason for this is that the bees were drunk all summer on cider. However this may be, a good fruit year usually means a poor honey crop with us. Whether the bees prefer drinking cider to gathering honey, or whether there is no honey to gather, I don't know. Reidsville, N. C., March 7. HUGH JOHNSON.

Flour Method of Queen Introduction.

Mr. R. F. Holtermann, in his Canadian Notes for Dec. 1, discredits my claim to introducing queens by the flour method. I think I am entitled to that honor. The mistake belongs to R. F. H. According to his Canadian Notes, Mr. MacDonald's claim is as a "bee-quieter." I had long used flour in this capacity before I thought of using it for queen introduction. I had tried Dr. Miller's water method, also the honey method; but neither was to my taste as a clean, handy, reliable method; and in seeking for such I hit upon the flour method; and after an extended use of the same I gave it to the bee-keeping world in 1909.

Hagersville, Ont., Dec. 19.

JOSEPH GRAY.

Wasps do Enter Hives with Bees.

About that wasp-nest, p. 16, Jan. 1, in about the same way I found one in a section of honey. Three cells were built in one beeway section, the second section back from the front, and the third from the right side of a super having fence separators. This was over a medium-strong colony in an eight-frame hive. Here is my side of an argument, although I haven't my proof, for I broke those mud cells out of the section, so I have neither section nor photo. But take my word for it against Mr. A. S. Parson's

argument, page 70, Feb. 1. I know those cells were built while bees were working in the same super, and some in an extracting-super of half-depth frames above the one in which they were built; and I know those wasps used the same entrance as the bees, there being no other entrance or crack large enough to admit an ant.

Merrill, Ia., Feb. 11.

G. L. ZIMMERMAN.

Sour Smell Comes from Aster Honey.

The sour smell that J. B. Chrisler, Louisville, Ky., speaks of, page 150, March 1, is caused by the honey gathered from aster. The odor is not unpleasant, but is very noticeable when the bees are bringing much of it in, and can be distinguished at a considerable distance from the hives. Last fall, on coming home from my place of business at night I could smell it at a distance of 600 ft. from the apiary. In fact, the amount of "smell" is such a good criterion as to the amount of honey coming in that one can tell the quantity he is getting from these indications alone. My 30 hives were never opened from July 15 till late in October, when I found that I had secured within 50 lbs. of the amount of honey I had expected to find, judging by the smell alone.

Harrodsburg, Ky., March 7.

W. H. REED.

Carbolized Cloths All Right in Special Cases.

I used carbolized cloths several times in England, and found that the plan has its advantages in special cases. When the weather is cool it helps to keep down robbing, and if the bees seem extra cross, as it causes less disturbance than smoke. But great care must be taken or the honey will be tainted. In one case especially I remember taking off sections for a friend late in the evening. The bees were so vicious that smoke had but little effect. They even stung me through my clothes. They would dart at and sting any moving thing. But I conquered them with the carbolized cloth. I used it according to the British Bee-keeper's Guide Book, page 101, 18th edition.

Leamington, Ont.

J. J. PENDRAY.

Alley Stock Non-swarmers.

I have just read J. E. Hand's letter on page 148. We got one of our first Italian queens of our old friend Henry Alley in the summer of 1874. Her bees were not quite non-swarming, but I got two queens of him seven years ago that certainly did produce non swarming bees; and queens reared from them, and mated with drones of your red-clover strain that we got of you ten years ago last fall, very seldom swarm, and are the best bees we ever had; while some we have of another strain that have a little Carniolan blood in them are much inclined to swarm. So instinct does not seem to be always the same.

Low Banks, Ont., Can., March 10.

ILA MICHENER.

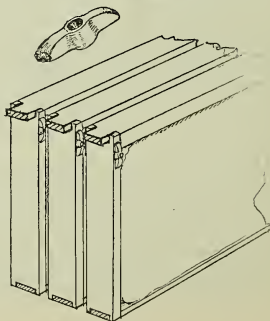
The Word "Pure" No Longer Necessary on Honey Labels.

I believe that, if we would leave off the word "pure" from labels, it would help as much as any thing to quiet the suspicion that honey is adulterated. A purchaser seeing "Pure Honey" on a label will naturally think there is an impure honey upon the market, and possibly some of it has got into the package behind the label.

Flint, Mich.

BARRETT PIERSON.

A stamped metal button, recommended by R. N. Brücknell, Dunedin, N. Z., as a frame-spacer.



Our Homes

By A. I. Root

Now, they do it to obtain a corruptible crown; but we an incorruptible.—I. COR. 9:25.

Be thou faithful unto death, and I will give thee a crown of life.—REV. 2:10.

Mr. Thomas P. Hallock, advertising manager for the A. I. Root Co., has just mailed me the following, which he clipped from a recent copy of the *Cleveland Plain Dealer*:

BREWER CROWNS WIFE.

ADOLPHUS BUSCH PRESENTS HER WITH A \$200,000 DIADDEM AT GOLDEN-WEDDING CELEBRATION.

Pasadena, Cal., March 7.—What is said to be the most elaborate golden-wedding anniversary ever celebrated anywhere in the world took place here to-day, with Mr. and Mrs. Adolphus Busch as the central figures.

The most beautiful and costly of the presents was the diadem presented to Mrs. Busch by her husband. It is a crown of gold, studded with diamonds and pearls, and valued at \$200,000. It was made in Frankfort, Germany. At the wedding feast to-night at the Busch mansion, Mrs. Busch was crowned and given a seat beside her husband on a miniature throne.

The presents received by the couple are valued at \$500,000.

Friend Hallock evidently thought I might use the above as a text or suggestion for one of my lay sermons; and by way of suggestion he adds just below the above extract the following:

For the brewer's wife, a crown of diamonds; for Jesus Christ, a crown of thorns; and what of the wives of the drunkards who have so generously poured their pennies, dimes, and dollars into this wife-crowning heathen's purse? Will they wear golden crowns? T. P. HALLOCK.

So far as I know, the writer of the above is not a member of any church (*as yet*), but he has given the world a sermon in the above few words that possesses a power and pathos seldom reached by the greatest divines of our or any other land. *Crowns* are supposed to be a reward, or an acknowledgment of some praiseworthy act done the people or the world. Even if that jeweled crown *did* cost toward a quarter of a million dollars, what had this woman done that she should receive it? Again, crowns are generally bestowed by the savings or contributions of those who have cause to remember with grateful hearts the kindly acts of the loved one. What has this woman done to *benefit* mankind? As has been suggested, the money that paid for it was probably wrong, no one knows how unwillingly, from poor hard-working women and children; and then to think of the awful—the terrible contrast between *this* crown and the crown of *thorns* worn by the dear Savior when he suffered, bled, and died, that we might live. I confess that this astounding contrast brought to me a more vivid and real conception of the crown of thorns than I ever had before.

In connection with this let me submit an extract from the front cover of the *American Issue* for Feb. 4:

KNOWN BY THEIR FRUITS.

Gather together into one view all the people you have ever known or seen or can think of who love the church better than the saloon; and all the people you have ever known or seen or can think of who love the saloon better than the church! If it could be done, no living human being upon this earth, who is capable of connecting two ideas, would ever need to read one single printed page of argument, either upon the "Fruits of the Liquor Traffic" or the "Evidences of Christianity."—REV. CHARLES F. AKED, Member Board of Trustees, New York Anti-saloon League.

Does it not begin to look, dear friends, as if the time had come, not only for our own nation but the whole wide world, to break the bands asunder that bind us to the liquor traffic? Is it not high time we had another "emancipation proclamation" that shall for ever set us free from the awful tyranny of Adolphus Busch or any other millionaire brewer? I am told that, at the St. Louis exposition, he gave away his beer to the thirsty crowds that came, not only by the thousands but perhaps by the millions, to view his gigantic brewery. Did he furnish all this beer out of the kindness of his heart, and his love for thirsty humanity? I tell you, nay; he did it out of love for the "dirty" dollars; and who knows how many an unsophisticated country youth got his first taste of beer at this very beer-palace? It was planned and managed on purpose to "create an appetite," and it *did* the business. He expected the press of our land would mention that "golden crown" with its glittering priceless jewels; but, if I mistake not, more than one editor will be prompted by the Holy Spirit to publish it with some such footnote as our good friend Hallock has already mapped out. God speed the day when we shall be working and planning for that "incorruptible crown" that "fadeth not away," but goes with us through death and beyond the grave—a crown not made with gold and gems, but "a crown of righteousness which the Lord the righteous Judge shall give."

MORE ABOUT GROWING RICE.

After the item on rice, p. 804, was printed, I received the Battle Creek, Mich., *Good Health* for December, and was at once interested in the title of an article by Frank L. Perrin, entitled

A NEW AMERICAN INDUSTRY.

This article is headed "Rice Production in Arkansas." Of course, it refers to the ordinary rice in our markets; but so far as I can determine the *upland* rice of Florida is practically the same thing: From this article I make the following extracts. I tried to find out how many square rods gave the three bushels in neighbor Raub's garden; but it was in little patches here and there, so it was hard to tell; but I think it might easily make from 40 to 60 bushels per acre.

The successes achieved in the sections mentioned have demonstrated the possibility of almost undreamed-of development and opportunity. When land, with almost a minimum of labor, and a moderate annual expense for irrigation, can be made to yield a net profit ranging from \$50 to \$80 per acre,

the fear of the bread-line grows considerably less distinct.

These recorded profits have been made in the Arkansas rice-belt every season for the past four or five years.

Undeveloped rice lands are within easy reach of any one with a very modest capital. The first outlay is not great. One can start in a small way and let his accruing profits develop and increase his holdings.

Rice is as staple an article of food as wheat or corn. It is less liable to failure, under proper conditions, than either of those cereals. The market is world-wide. It need not be sought. Rough rice from the thrasher sells at 90 cts. to \$1.00 a bushel.

Sixty per cent of the population of the world live on rice alone. The progressive American farmer is not likely to overlook a bet where all the chances are in his favor.

Poultry Department

By A. I. Root

MY INDIAN-RUNNER-DUCK STORY.

"A duck before two ducks, a duck behind two ducks, a duck between two ducks, how many ducks were there?"

In my childhood days the above was a problem or conundrum that we children were fond of repeating over and over. Well, before I can get right down to my "duck story" I shall have to digress a little. When my flock of chickens got up toward 300 they seemed to think they needed a little more room than my two acres afforded, especially when the severe drouth began to make green food scarce, and so I purchased three acres more, right adjoining the creek I have before mentioned. Well, in putting a fence of netting along the stream to keep the chickens in and to keep "varmints" out we had quite a difficult job, owing to the dense undergrowth of bushes, etc.; and in one spot there was a sort of cave, or cavern, opening just a little above the water level. Somebody told me this used to be an alligator-cave, and on inspection I found the top overhead worn smooth and hollow, due as if the great reptiles had worn a sort of groove by rubbing their scaly backs against the soft rock as they crawled in and out, say for hundreds or perhaps a thousand years past. Such or similar records have always had an especial charm for me, for they give one a little insight into the probable age of this earth we live on. When exploring the caves in Arizona, as well as Mammoth and other caves, I have watched the deposits of bat guano, and figured, as well as I could, how long the bats had probably been roosting on the ceiling overhead, and raising the floor with the accumulation of the droppings for ages; and when I took visitors around over the place, I always showed them where alligators had in past ages "scratched their backs" on the roof of my cave. I always gave this information as a sort of joke; and little did I dream that, when my neighbor Rood sold me the three acres for \$150, he threw in a real *live* alligator. But I am anticipating, for I find I shall have to digress once more before I get to my duck story.

When building the fence I noticed at the further corner, down by the creek, quite a stream of water coming from off across the lots; and by putting in some tiles we carried this stream clear across the three acres, above the creek, so as to get something like a fourth of an acre under sub-irrigation without putting down an artesian well, which would cost, in this locality, toward what the whole three acres cost. You see this stream is principally made up from the waste water from the wells of my two neighbors, Mr. Rood and Dr. Braymer. Well, when our tiles were laid to a point just above the "alligator-cave," as there was still quite a nice stream of water left after my sub-irrigated strip, I turned it down just over the cave without even thinking I was going to have a beautiful little waterfall, with almost no expense. There was a very small stream already coming out of the cave, and I had made a little dam to hold the water for my young ducks when they should be hatched; but I was greatly puzzled to find this dam torn down or flatted down every few days. I told Wesley there must be an intermittent spring up in the cave, that occasionally let a flood of water down, and *that* washed away our dam; but I was puzzled to know *why* we never happened to be on hand to see this spring at "flood time." Well, the first brood of ducks were hatched; and when they were about a week old they were taken with the mother "biddie" down to the little yard made around the mouth of the cave, taking along the older duck I have mentioned, as a sort of "chaperon" to the five smaller ducks. All went well for a day or two; but one afternoon, in a short space of time, the bigger duck and one of the little ones was missing. Every thing was scanned with great care clear around their enclosure, but not a thing was found to explain their disappearance. On the afternoon of the next day Wesley came rushing up to the house to tell us a great alligator had put his head out of the cave, and to get the shotgun in case he came out again. Sure enough, he soon came out again, and was going for the ducks; but the mother hen bristled up, and proposed to show battle in spite of the great yawning jaws that could easily take *her* at a mouthful. If this is not an illustration of "flying in the face of danger," I don't know what is. Just at the critical moment, when a second or two would decide the unequal contest, Wesley got his shotgun in play, and gave the brute a broadside right under his right arm. It is well known that an alligator hide is proof against shot and even bullets unless you strike them in the eye, or under the arm or some other tender spot. We don't know how much he was hurt, but he wheeled around awful sudden and put back into his den. I went for neighbor Raub, whom, you may remember, is a trapper, and he and Wesley worked like beavers all the afternoon; but, although they chased him into a corner of the cave, night came on before they got him; so they plugged up the hole securely, as they

thought; but next morning we found he had gotten out during the night through a hole about as large as a good-sized stovepipe. Wesley thinks he was about six feet long. Several days have passed; and as the remaining four ducks are unmolested, we hope he has gone to other "hunting-grounds." I felt the loss of the one oldest duck the most, for he and I had been devoted friends ever since I tapped on the shell and he responded, a week before he had even broken the shell. We have now a couple of dozen of younger ones, but none of them just take the place of "my first born."

It is now nine or ten weeks since we have had rain—the longest drouth for several years in this region; and as the lettuce we have been getting from neighbor Rood is gone, our chickens are suffering for lack of green food. It is no use sowing oats in the lanes I have mentioned, for they don't come up, at least to amount to anything, without moisture. Well, down where we laid those irrigating-tiles, perhaps a foot or 18 inches below the surface, oats and other things grow just beautifully. We sowed some sandy vetch with the oats, and I think I never saw any plant grow faster. We have used no fertilizer on this ground, not even poultry manure; but under the influence of just the artesian water alone, every thing seems to grow with wonderful luxuriance. The tiles were laid as nearly on a level as we could lay them, and have the water run; and, in fact, the water was running through them while they were being laid; and, as a consequence, the ground is pretty well soaked for several feet each side of the tiles, and vegetation of all kinds is flourishing most luxuriantly.

The largest and finest of my two ducks is still furnishing a large nice egg every day, and she has now come pretty nearly an egg every day for 75 days. The other of the two ducks has done almost as well except that she missed three days about two weeks ago, and has not laid for two or three days past. I am putting all the duck eggs under sitting hens, and expect to have quite a flock of Indian Runners out in the big creek by the time we go back north, say toward May 1. Besides the moss I have mentioned, there is a kind of snail or shellfish in the stream in great plenty; and I notice the ducks go for these with great avidity as soon as they are let out in the morning. I don't know what ducks and duck eggs will bring in this market. When I enquired they said they had never had any duck eggs offered, and all the green ducks they had ever sold were sent in on ice, by express, from Georgia. What do you think of that? I suppose the reason is that nobody has as yet got around to the task of developing the possibilities of this southern clime. There are two different parties near here who have the Indian Runner ducks, and I am told they are doing quite well with them. One of them is advertising eggs at \$1.50 a setting.

Health Notes

By A. I. Root

NUTS, BERRIES, ETC., IN "ABANDONED" NEW ENGLAND.

My dear Mr. Root:—You ought to have been here in chestnut time. We have none right on my own farm; but by walking a mile I could find an abundance. My six-year-old boy and I went nutting three or four times, and gathered over a bushel of fine large sweet chestnuts, and more than that of hazelnuts, the latter in the hulls. Hazelnuts we can gather within a few steps of our front door; and we have a dozen or more different kinds of wild blackberries, dewberries, red and black raspberries, blueberries, strawberries, salmonberries, spike-nardberries, wintergreenberries, cranberries, huckleberries, and elderberries. About a third of a mile from the house we can gather all the cranberries two or three families could use, and as fine as I ever saw. Elderberries are very plentiful, and large baskets may be gathered within a few minutes at any time in season, and we use many of them. Did you ever eat an elderberry pie made with about one-eighth or one-tenth finely cut Maiden Blush or Porter apple mixed with the berries? If not, you have something to look forward to. Elderberries are so quickly and easily gathered, and (with the proper proportion of apple) make such delicious pies, that we use them liberally in season, and can many with the apple for use the rest of the year. The idea is worthy of being more widely known.

I have always eaten my baked potatoes "skins and all;" but usually, at hotels and restaurants, the patrons discard the crusts—to my taste by far the better part. A few years ago I read that the more valuable mineral elements were lost when the skins were not eaten, and since that time we have eaten the skins, even of boiled potatoes. Probably they are not so pretty; but, "pretty is that pretty does," and we like them. Polished rice, as sold almost universally in this country, has the better part removed, just as white flour has. The Asiatics know better than to polish theirs, and we ought to. You will find the higher-priced unbroken rice that you can buy of Montgomery Ward & Co. of better quality than that usually sold for highest quality, and far better than the broken rice. I will enclose directions for cooking rice.

HOW TO BOIL RICE.

Wash one cup of rice thoroughly. Bring to the boiling-point three cups of water. Add a scant teaspoonful of salt, and, when the water is boiling briskly, add the rice gradually. Don't stir while boiling. In about 15 minutes the rice will have absorbed the water, become soft, and puffed to three times its original size. Place cooked rice on the back of the stove or in the oven to dry out. Serve hot, every grain separate, with soups or gravies.

An excellent cook told me a short time ago that she had never known how to cook rice properly until she saw this, but had thought she did.

I would deem the use of bran too harsh a treatment for constipation except in desperate cases. Phosphate of soda is a mild laxative, and will not only relieve but cure constipation. I have known good physicians to advise its use in teaspoonful doses three times a day, until cured, and have known several severe cases entirely cured. It is not as effectual in relieving stomach acidity as the bicarbonate of soda, but as a laxative it is of the best. It does not dissolve readily in cold water, so I have used it in cocoa, and it improves the flavor greatly. I always use salt and baking-soda in my cocoa when not using phosphate of soda, as they improve the flavor and also make it darker in color.

You mention Philo's advice to use an old cock with thirty or forty pullets in order to beget pullets. I have understood that the stronger and least taxed in strength *sexually* would be inclined to beget the opposite sex. Thus it would seem that a strong cock with few hens or pullets would be apt to beget what he needed—more hens, while an overtaxed cock with many hens would not. And many hens with a cock weak sexually, or overtaxed, would beget plenty of cocks, as that would be what they were needing. I trust you will follow up the matter

of experiments in getting a large percentage of pullets by crossing, for it is a matter of very great importance, and a boon to the egg-producer, to avoid raising young cocks.

Have you noticed the Government report on average yields of corn per acre in the different States for 1910? Again this State heads the list with a yield of 53.2 bushels—more than ten bushels above the yield of any State in any previous year. Ohio and Iowa stand 12th and 13th, with 36.4 and 36.3 bushels respectively. The farm value for Connecticut and Iowa on Nov. 1st averaged 75 and 39 cents respectively. Thus an average acre of Connecticut corn this year was worth at farm \$39.90, and an Iowa acre \$14.16. And the Iowa acre will sell for from five to ten times what the Connecticut acre will—I mean the land.

My own yield I am half ashamed of—only sixty bushels; but we had, and still have, the worst drouth ever known in this part of the State. Nearly all farmers have been hauling water for their stock, and even for house use, since July and August, and it is now frozen tight with wells, springs, brooks, and ponds empty. A yield of only seven bushels above my State's average is surely not one to be proud of; but I could have done better, I believe, if I could have had help to cultivate it once or twice more. It was cultivated only twice with a 14-tooth harrow, once in a row, and hand-hoed once. It should have been cultivated about haying time; but all my neighbors were too busy to spare me the time, and I have no work team of my own. I sold the crop in the field for just \$50.00 per acre, standing in shock, unhusked. It cost me less than \$10.00 per acre, allowing myself liberally for my own labor. I used no manure nor fertilizer. Quite a difference in profits—in Iowa the land worth twenty times the yearly profit, and here the profit three or four times the value of land.

You speak of a gasoline dog. I wish to go on record as prophesying the early appearance of a gasoline cultivator, or call it an "auto" cultivator. One ought to be made that would sell for less than the price of a good work team, and it would be used but a few weeks yearly, and at a season when there is plenty of work for the farm teams.

I enclose herewith an advertisement clipped from one of the January magazines, offering chufas for planting:

"GROWS FROM SEED FOUR MONTHS FROM PLANTING.

"A few ground almonds (chufa) growing in your garden this year will give you a great deal of pleasure. Plant in the spring, and you will get a crop in about four months. The nut is of fine flavor, resembling the coconut or almond; meat is snow-white; shell thin, and great producer. One nut planted will produce from 100 to 200 nuts. Will grow in any soil or location."

I have looked over my 1910 seed catalogs, and find only two that offered them—Vaughn's and Ford Seed Co., of Ravenna, Ohio. Neither firm makes any mention of their use for human food, but say they are good for pigs and poultry. I expect to give them a trial, but think it strange they have never made any more headway, as I have seen them cataloged more or less for many years. I hope you have found something that will prove of great value.

Vaughn's catalog directs to soak chufa seed before planting if it is dry. Nuts generally will not germinate after having been dried; but sometimes they may be made to do so by soaking well.

Packerville, Conn., Dec. 24. E. P. ROBINSON.

Temperance

The following, received with a letter from the superintendent of the Michigan Anti-saloon League, is right to the point. By the way, Michigan now has forty dry counties.

LIQUOR-DRINKING DECREASING AS SHOWN BY REVENUE COMMISSIONER'S REPORT.

The beer and whisky interests are trying hard to squeeze some comfort out of the preliminary report of the Commissioner of Internal Revenue for the

fiscal year ending June 30, 1910. Because this report shows an increased *withdrawal from bond* of 12,007,611 gallons of distilled spirits and an increase in the amount of revenue paid for beer over 1909, there is a great effort made to grow hilarious and to declare the former decrease was due to hard times and not to the spread of prohibitory laws or the widening of "dry" territory. The liquor journals are making much of these figures, and so are those daily papers which lend or sell themselves to the liquor interests.

Let us look at the figures of the internal-revenue commissioner, analyze them, and compare them with the figures of other years. Of course, the figures of the commissioner are compared with those of 1909.

In 1909 the *withdrawals* of whisky from bond aggregated 116,650,165 gallons. In 1910 the *withdrawals* were 128,675,776 gallons. According to the commissioner's figures revenue was paid on 59,485,117 barrels of beer in 1910, against 56,303,497 barrels in 1909—an increase of 3,181,620 barrels, or 98,630,220 gallons.

You say that looks bad. You say you thought there would be a decrease. If you are weak-kneed, you say it does not pay to fight the traffic. But if you will investigate you will find this alleged increase is no increase at all, and that instead of being discouraged there are reasons to be encouraged.

Let us make some comparisons. Here are the figures for the years 1907, 1908, 1909, and 1910, these figures covering *withdrawals* of distilled spirits from bond and beer on which revenue tax was paid:

1907....	2,019,691,111 gals.	1909....	1,935,544,113 gals.
1908....	2,006,233,408	1910....	2,045,181,943

Do these figures prove that the people of this country are drinking more liquor? Not at all.

BEAR IN MIND THAT WITHDRAWALS FROM BOND AND PAYMENT OF REVENUE TAX DOES NOT MEAN THAT ALL THESE INTOXICANTS HAVE BEEN SOLD AND CONSUMED. Because of a desire to make a good showing in the report of the internal-revenue commissioner, dealers loaded up heavily, and millions of gallons of spirits withdrawn from bond, and of beer on which the tax has been paid, has not been consumed. THERE IS A DIFFERENCE BETWEEN WITHDRAWALS FOR CONSUMPTION AND ACTUAL CONSUMPTION.

ANOTHER THING. A LARGE AMOUNT OF WHISKY AND BEER INCLUDED IN THE REPORT WAS SHIPPED ABROAD. Producers are pushing their export trade, and all exports are a part of the aggregate as shown by the report.

President Gilmore, of the Model-license League, predicted there would be an increase in withdrawals, or consumption, as he calls it, this year over last. He is not a good prophet. The consumption, using his term, per capita, is less than last year, and shows a big slump compared with recent years. Here are the figures:

1907.....	23.54	gallons per capita
1908	23.02	"
1909	21.86	"
1910	21.4	"

If the per capita for 1910 was as great as for 1907, the figures of the internal-revenue commissioner would have been increased by 180,000,000 gallons. The per capita consumption slumps as the population increases. Is there any thing in these figures to discourage temperance people? Is there any thing in them to encourage the liquor interests?

But this is not all. The average yearly increase in beer and whisky for eight years preceding 1908 was over 96,000,000 gallons. Even though the aggregate for 1910 equals that of 1907, there remains the loss of that average yearly increase for three years, which is 288,000,000 gallons, which, added to the actual decrease of 1908-1909, makes a total loss for the three years of approximately 375,000,000 gallons.

So what have the liquor men to brag about for the past three years? They have fallen short hundreds of millions of gallons in consumption, while there has been a steady decrease in the use of intoxicants per capita. Even the influx of 1,500,000 foreigners a year with their almost universal drink habit fails to bring the per capita use up to what it was a few years ago, or even to what it was last year.

On the whole it is encouraging to the opponent of the saloon to know the per capita decrease continues, and that there is a shortage for the past three years of 375,000,000 gallons over the consumption in the years prior to 1908.